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COMPUTERWORLD

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IBM kick-starts SAA onto office track

Migration worry mutes user praise

BY STANLEY GIBSON
CW STAFF

NEW YORK — It will not all ship right away, there is no Unix support, and multivendor environments are left out in the cold. Nevertheless, users enthusiastically hailed IBM's much-anticipated Officevision last week.

Most said they perceived the announcement exactly as IBM intended — proof that IBM Systems Application Architecture interfaces and protocols can help tie together their corporate systems. A chorus of users joined third-party software vendors in welcoming the functionality of Officevision, which they agreed was long overdue.

"What IBM is doing is great. We've been looking for that seamless environment for some time," said George Conniff, manager of information services at Bechtel Group, Inc. in San Francisco. However, Conniff and other users face prickly migration questions surrounding current office automation systems and non-IBM equipment.

In general, users said IBM's prices were not out of line, although some questioned whether the addition of IBM's OS/2 Presentation Manager interface was worth the price. IBM Vice-President Joseph Guglielmi said an eight-user local-area network configuration will cost about $8,000 per user for hardware and software.

Clearly, IBM expects Officevision to boost its own sales. "Cooperative processing will offer users more functionality, and it will require more mainframe MIPS and storage, so everyone wins," said IBM Vice-President Earl Wheeler, chief of SAA development. Wheeler acknowledged, however, that SAA as a

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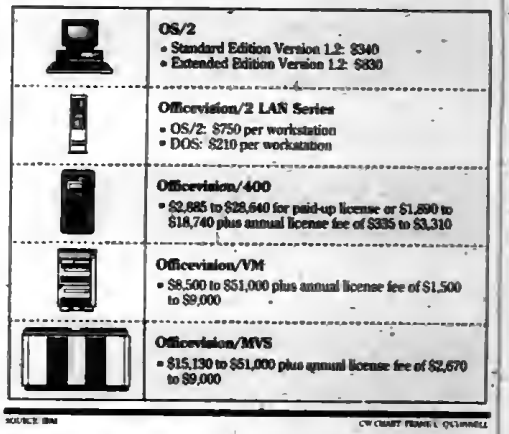
Buying into Officevision



SOURCE: IBM

CW CHART FRANCIS QUINNELL

Officevision plan hinges on LANs

BY PATRICIA KEEFE
CW STAFF

NEW YORK — Last week's unveiling of the initial pieces of IBM's Systems Application Architecture signals both a first step toward the future of departmental systems and the beginning of the end for certain pieces of technology.

The IBM system of the future clearly relies on connectivity. In an announcement layered with communications overtones, the mainframe giant has finally embraced the "L" word — LANs.

After years of dismissing local-area networks as mere extensions of workstations, IBM last week unwrapped Officevision, SAA-compatible software anchored by an IBM OS/2 Extended Edition-based network and LU6.2 connectivity.

The major components of the IBM announcement are the following:

- Officevision for the four current SAA strategic platforms: MVS, VM, OS/400 and LAN-based OS/2. The integrated software features electronic mail, calendaring and a graphical interface and also provides for communications and data transfer among the disparate systems.
- OS/2 Extended Edition Version 1.2. The upgrade features a suite of communications enhancements, including X.25, LU6.2 and X.400 support, as well as Common User Access 2 support. Storage and memory overhead on the workstation are lightened by moving much of the communications software to the server.

The Officevision family will provide information systems

Continued on page 120

Runaway program gores Sabre

BY JEAN S. BOZMAN
CW STAFF

TULSA, Okla. — American Airlines has anticipated a lot of disasters that could disrupt its Sabre Passenger Services System, but it did not foresee the glitch that brought the premier reservation system to its knees for 13 hours last weekend.

Located in an underground computer room here, the Sabre computers are protected from tornadoes, plane crashes and power outages. But they were not insulated from a rogue application that erased the digital labels on 1,080 disk drives, forcing travel agents and the airline's Sabre users to consult printed airline flight schedules and write out tickets by hand.

American Airlines officials would not comment on the amount of revenue that was lost because of the outage, but the company's front-end system of 20 interconnected Digital Equipment Corp. VAX computers routed requests to other airlines' reservation services.

"Even if we went out to do this [damage], it would have been extremely difficult to duplicate," said Jim Juracek, vice-president of systems engineering at American's Sabre Computer Services division.

Many travel agents were still able to make electronic reservations via competing airline systems, including United Airlines' Covia and Texas Air's System One.

"We could book the American flights on [United's] Apollo," one Midwest agent said, "but we couldn't be certain the space was available. Without Sabre, the seats and the discounted fares could not be confirmed until flight time."

The massive computer crash started just before midnight May 12. It happened while Sabre engineers were reformatting the disk drives during an expansion project that would have extended support from Sabre's operating system — a modified version of IBM's Airline Control Program — to a total of 1,260 drives.

"We'd much rather that Sabre had a planned outage than to have our business interrupted all day," said Joan Mueller, branch manager of operations at Ask Mr. Foster's regional headquarters, which is across the street from IBM offices in White Plains, N.Y. Mueller's staff, composed of 35 agents, had to handwrite most tickets until 2:30 p.m. the day following the outage. The

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"Cooperative processing will offer users more functionality, and it will require more mainframe MIPS and storage, so everyone wins."

EARL WHEELER
IBM

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ARCHIVE

It remains true that the more things change, the more they stay the same. Fifteen years ago this month, an IBM expert said 90% of information systems centers lacked an orderly approach to data security . . . One year later, experts claimed bugs in Federal Aviation Administration computers could cause air safety problems . . . Also, as the Prime vs. MAI Basic Four battle heats up, it's worth noting that three years ago this month, the former Burroughs Corp. launched its bid for Sperry Corp.

Building your systems development group with the business in mind. Page 87.

EXECUTIVE BRIEFING

■ **SAA arrived** with IBM's introduction of Officevision last week. The product line, which will become available over a two-year period, unites OS/2-based workstations, servers and large systems in a cooperative processing model for electronic mail, calendaring and other office functions. **Page 1.** Users were upbeat about Officevision's potential, though some were concerned about migration from existing office systems. **Page 1.** IBM also gave its long-awaited endorsement to Ethernet and Microsoft's LAN Manager, confirming two years of speculation. **Page 120.** A raft of independent vendors were on hand to endorse SAA and introduce cooperative processing software ranging from human resources to accounting and insurance. Deliveries are scheduled to begin in the fourth quarter. **Page 119.** Users say Officevision may finally give them a reason to go to OS/2. **Page 120.**

■ **More companies take users off the dole,** giving them real control over their own pieces of the corporate information resource. Lack of standards hasn't stopped IS operations from forging ahead with global networks, distributed repositories and plans to migrate application development into business areas. **Page 71.** Some companies have begun to migrate IS staff into business units, and many more are considering such a move. In many cases, these transferred personnel are reporting to business managers. **Page 84.**

■ **A rogue application** crashed American Airlines' flagship Sabre reservation system earlier this month. Despite heavy backup and security, American's network was victimised by a stray program that rendered disk drives useless and shut down the system for 13 hours. **Page 1.**

■ **Buyouts lead to resignations** in corporate IS at two major organizations. The top IS executives at Emhart and Chicago Pacific announced their departures as their highly decentralised departments were eliminated. **Page 8.**

■ **Borg Warner scaled** down from a 4341 to PC LANs after its takeover defense forced a 50% cut in the IS budget. Though the applications strained 80386 servers to the limit, the move is working, and users seem happy with the friendlier interface. **Page 63.**

■ **Divide and compute,** says the Port of Seattle, which moved from an aging Burroughs mainframe to a network of eight Wang minis. Officials say the network is cheaper and easier to upgrade. **Page 25.**

■ **Tight management** enables Paine Webber to save an expected $10 million in communications costs this year, or about 10% of its budget. The process involved reviewing targeted expense items, getting tough with vendors and developing project schedules. **Page 53.**

■ **Cray cloven** as the largest remaining U.S. supercomputer maker spins off a company to develop a supercomputer based on the highly experimental gallium arsenide chip. Seymour Cray will head the venture, his third start-up. Analysts largely praised the move. **Page 6.**

■ **Unix lovers perk up** as OSF and Unix International join X/Open Consortium, raising hopes that they are moving closer to putting differences behind them. **Page 12.**

■ **Organizing a systems development department** means taking into account the structure of the entire company — does it follow along business or functional lines or a combination of the two? Other factors to consider: striving for stability but realizing that change is inevitable, providing for departmental strength that goes beyond the individual employees, practicing politics as well as technological sensitivity and allowing for organizational evolution that occurs as the company evolves. **Page 87.**

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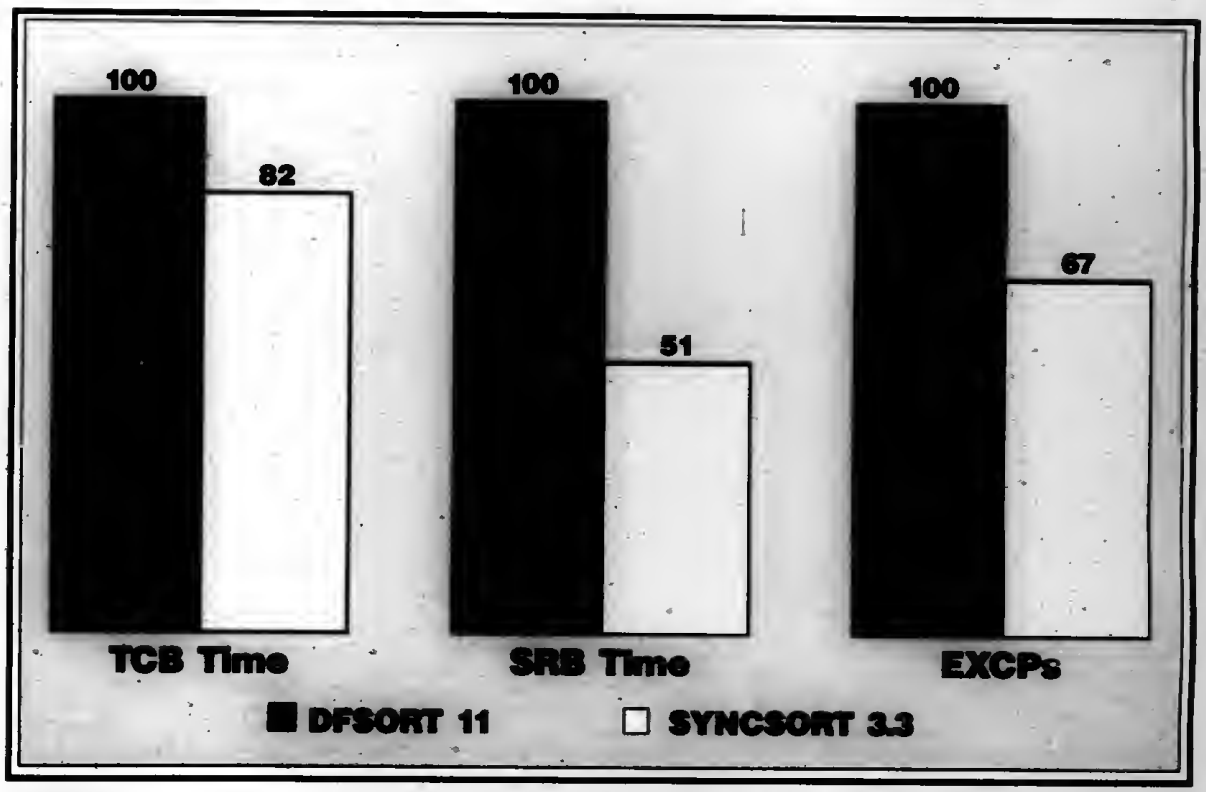

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Prime to MAI: Fish or cut bait

BY NELL MARGOLIS
CW STAFF

NATICK, Mass. — Battered by seven months of fending off a hostile takeover by MAI Basic Four, Inc., Prime Computer, Inc. last week fired a shot that could be either its best or its last.

In a letter sent to MAI Chairman Bennett S. LeBow, Prime Chairman David Dunn challenged the would-be acquisitor to come up with the financing for MAI's vaunted $20 per share, or approximately $970 million, tender offer by June 2.

If LeBow raises the money, Dunn said, Prime will dissolve its poison-pill shareholder provisions — now amended to let MAI complete the purchase, if possible — withdraw its opposition and let the shareholders resolve what has become one of the bloodiest takeover battles in the computer industry.

If Prime calls MAI's bluff, however, Dunn said, then Prime expects MAI to fold its offer and let Prime get back to business.

MAI responded with a terse statement that it was "evaluating all aspects of its offer . . . in light of Prime's recent flurry of public announcements." Those announcements included a weakened quarterly earnings report and reduced financial projections through 1990, which Prime attributed to the costs of defending itself against the takeover.

Wall Street reacted swiftly, hammering Prime stock on the belief that MAI will either back off from the $20 figure or drop its offer altogether. MAI has not been available for comment.

An indication that Wall Street could be right came later in the week, when MAI declined Prime's offer of access to confidential financial information. According to Prime, MAI stated that a clause in the confidentiality agreement binding MAI to its bid was unacceptable.

"This is becoming very interesting, in the Oriental sense," said Stephen Dube, an analyst with Shearson Lehman Hutton, Inc., referring to the ancient Oriental curse, "May you live in interesting times."

Analysts agreed that if MAI does reduce its price, the chance of Prime's shareholders accepting the deal is minimal. Moreover, Dube noted, "If LeBow lowers the price, he's going to find himself back on square one, battling this whole thing through the courts." With speculation and uncertainty, he said, "Only one thing is clear: This battle has been going on too long."

HP pushes DAT drive standard

BY J. A. SAVAGE
CW STAFF

SAN DIEGO — Hewlett-Packard Co. is the second big company to give a shove to one of the two factions attempting to standardize digital audio tape (DAT) for data backup.

HP will today announce its first DAT drive for the OEM market based on Data Digital Storage standards. Sony Components Products Co. last month introduced SDT-1000, based on the same standard.

DAT uses tape cartridges the size of audiocassettes and recording technology like that of a home videocassette recorder. It can store more than 1G byte of data on one cassette and will primarily serve as archival backup for workstations, low-end minicomputers and high-end personal computers.

Speed is the trade-off. Seek times "are about 1,000 times slower than a Winchester drive," said Bert Vermeulen, HP's product manager for DAT.

In the last year, two standards for DAT have evolved that address two separate storage needs. Data Digital Storage, developed by HP and Sony, uses sequential recording for straightforward backup, and any changes would have to be appended. Data/DAT allows for updating and placing of data directly into the data set.

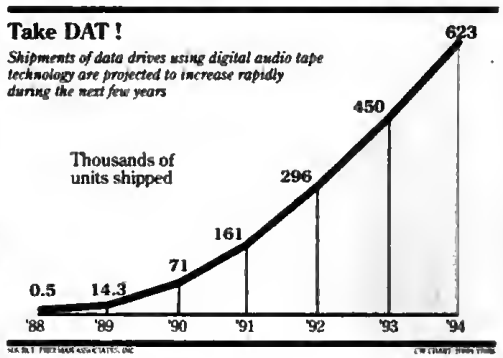
The transfer rate of Data Digital Storage is higher, at 183K byte/sec., while Data/DAT reaches 177K byte/sec. at best, according to Lee Elizer, president of Data Storage Concepts, Inc., a Santa Barbara, Calif.-based storage consultant. Data Digital Storage holds about 1.3G bytes of data while Data/DAT holds about 1.2G bytes. Both use 4mm tape cassettes.

"The two standards are coming from different directions," said Bob Abraham, an analyst at storage consultant Freeman Associates in Santa Barbara, Calif. "If you want a disk drive, the [Data/DAT standard] is for you."

"With DDS, it will take a small lifetime to find data," Elizer said.

Analyst Hinda Chalew, from Dataquest, Inc. in San Jose, Calif., agreed: "DDS can't just say they are for archival storage and backup. Over time, HP will become more application-sensitive — more like Data/DAT."

While 12 companies have lined up behind Data/DAT, including Apple Computer, Inc. and Hitachi Ltd., only Gigatrend has a product available. A finalized Data/DAT standard is expected by the end of the year, a Gigatrend spokeswoman said.



Sabre

FROM PAGE 1

office has only one terminal each for United's Apollo and TWA's PARS systems. "We were picking up the phone and calling like in the old days," Mueller said. "We really didn't catch up with the paperwork until Monday morning."

The culprit was a "core-walker," Juracek said. "We had a program that was changed erroneously by another program. The changed piece of information in it did something we never intended for it to do and that was to erase critical storage data on 1,080 disk drives."

The erroneous program "walked" though Sabre's memory, stripping away the digital labels on each disk volume and making it impossible to address any of Sabre's disk drives. While the Sabre disk farm contained 700G bytes of data, just 2,500 records were lost, Juracek said last week. The total amount of memory lost was less than 1M byte, he claimed.

"The field that was changed was a control field in the formatter utility," he explained. The ACP operating system, overwhelmed by its inability to address the disk drives, collapsed nearly instantaneously, Juracek added. But the cause of the failure was not discovered for nearly an hour.

Wake-up call

"Our reaction was one of absolute horror," Juracek said, who learned of the outage after being awakened by an emergency phone call on May 12. "It was our worst nightmare," he added, "especially because we take enormous pride in the quality we produce in Sabre's service levels."

The Sabre system is down an average of six minutes a week for maintenance, Juracek noted, and is usually upgraded "on the fly" so that service to other parts of the world is not disrupted. Because ACP cannot run without a disk subsystem, Sabre software engineers took the unusual step of rebooting the crashed system using IBM's VM operating system. Then, they had to relabel each disk drive and reset the pointers that indicate where passenger data is located.

The pointers are critical, because the information on just one ticket is scattered across multiple disk drives. While most Sabre data was not lost, the "pointers" to all flight reservation data were — and it took 100 programmers and systems engineers more than 10 hours to relabel each disk volume.

The system was restarted under ACP just before 7 a.m. Central Daylight Time, and the reformatting was done by 11 a.m. Then, due to pent-up network demand, American's systems engineers had to gradually restart Sabre, slowly admitting more traffic from 27 front-end communications processors here.

Sore foot

Sabre, which has been running a custom version of ACP for approximately 20 years, found that the IBM operating system's unsegmented memory, which feeds a central complex consisting of eight IBM 3090 Model 200E computers, became Sabre's Achilles' heel.

But even the next version of the system, called TPF 3.1 — due to be installed along with 3090 S upgrades in the third quarter — would not have prevented the problem, Juracek said.

TPF, the successor to ACP, is used by airlines, banks and shipping companies because of its high real-time transaction rate. TPF 3.1 will allow systems designers to divide Sabre into multiple computer complexes, while retaining a single-system image view of the data they contain. But virtual storage, which is now commonplace in IBM's MVS operating system, will not be available with TPF until sometime in 1993, Juracek added.

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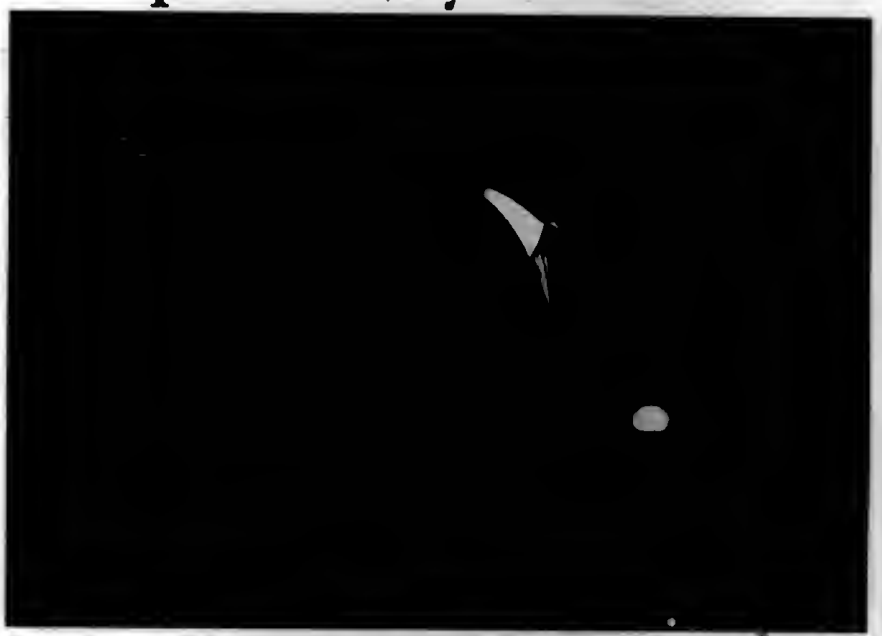

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Cray casts out founder's unit

BY JAMES DALY
CW STAFF

MINNEAPOLIS — The dynamics of the supercomputer industry were abruptly altered last week when Cray Research, Inc. unveiled a restructuring plan that will slice off approximately $50 million in machines, muscle and material and create a new company headed by founder Seymour R. Cray.

Seymour Cray *to head supercomputer spin-off*

The move is an attempt to soften the wallop that research costs have inflicted on Cray's recent profits by dividing the company into two technological camps, according to Cray officials.

Rollwagen says *ETA demise affected decision*

While Cray Research's efforts will continue to focus on its silicon-based product line, the newly formed Cray Computer Corp. will emerge from the experimental gallium arsenide chip technology now being worked on at the Cray-3 development labs in Colorado Springs. "If we were a 'normal' company, we'd be tempted to choose between the two projects," said Chairman and Chief Executive Officer John A. Rollwagen. "But it's clear that both of them offer tremendously exciting capabilities."

Although both machines are expected to be comparable in performance, they are quite different in approach. Cray Research's development work on its next-generation C-90 will be silicon-based and promises a more immediate commercial success, while Seymour Cray said he believes the still-unproven gallium arsenide technology will be the linchpin in the next generation of supercomputers.

Cray Research will shift the money and equipment, which is about 5% of its assets, pending receipt of a favorable tax ruling from the Internal Revenue Service. Cray Research will also provide Cray Computer with up to $100 million in operating funds during the next two years.

Rollwagen added that Cray Research will distribute 90% of the stock in the new company to its shareholders on a tax-free basis and retain a 10% interest.

Seymour Cray is expected to be assisted by Neil Davenport, vice-president of Cray's Colorado operations, who will become Cray Computer's chief operating officer.

Analysts saw the move as a positive one that signals a maturation of Cray Research. "Cray has been transformed from a very romantic, leading-edge technology company into one that has to address significant business and marketing constraints," said Neil Weintraut, an analyst at Hambrecht & Quist, Inc. in San Francisco. "The C-90 appears to be a realizable product that should satisfy them for two or three generations, so why should they continue to fund a project that is very risky?"

The dramatic split of the world's dominant supercomputer force is the latest wave to wash over the stormy market. While Cray Research is still the leader in the supercomputer business, it has faced increasingly intense competition from Japanese vendors such as Fujitsu Ltd., NEC Corp. and Hitachi Ltd., which have produced less expensive and sometimes more powerful machines.

Additionally, Control Data Corp. rocked the industry just over a month ago when it announced that it was terminating its 6-year-old supercomputer unit ETA Systems, Inc. because it could not afford the financial drain.

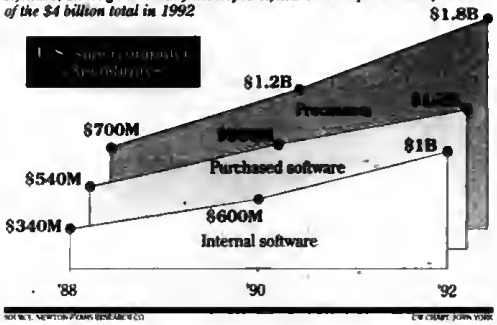
Rollwagen admitted that the demise of ETA was a factor in the decision to split up the company.

"It's critically important that the U.S. have a supercomputer industry, and by definition, the only way that we have an industry is if there is more than one viable competitor," he said.

But some observers said such claims are spurious and suggested the move may have been prompted by Cray Research's reluctance to appear as a monopoly. "It's face-lifting," said Lana Kartashev, president of the International Supercomputing Institute in St. Petersburg, Fla. "It's like having one chess player controlling both the white pieces and the black pieces. That's not competition."

Super market

Rapid growth is projected in the U.S. market for supercomputers and software, although internally developed software will represent one-fourth of the $4 billion total in 1992



Let bygones be bygones

Control Data Corp. said it will market supercomputers from Cray Research, Inc. under a joint arrangement announced by the two companies last week.

The pact, not yet formalized, was announced May 16, almost one month to the day after CDC's decision to fold its money-losing supercomputer subsidiary ETA Systems, Inc. Meanwhile, former rival Cray had news of its own, announcing that it is splitting into two companies (see story above).

James E. Ousley, president of CDC's Computer Products Group, said CDC will act as the prime contractor for customers requiring workstations, mainframes and supercomputers. Cray "will be the subcontractor for the supercomputer part," he said.

Regarding users of CDC's defunct ETA10 line of supercomputers, Ousley said CDC will stand by its commitment to support ETA hardware for five years and ETA software for three years.

In addition to the joint marketing pact, the two firms will explore opportunities to develop, enhance and market new and existing products, specifically looking for better ways of interfacing Cray supercomputers with Cyber mainframes and workstations. Ousley said some of these capabilities already exist in CDCNet, CDC's networking product, and that these will be enhanced.

ELLIS BOOKER

Thinking Machines undercuts supers

BY GLENN RIFKIN
CW STAFF

Making good on a 2-year-old promise to establish a new price/performance standard for supercomputers, Thinking Machines Corp., the Cambridge, Mass.-based supercomputer maker, last week introduced two scaled-down models of its innovative Connection Machine, which features 64,000 processors working in parallel.

Thinking Machines introduced two models dubbed the CM-2A, both of which are scheduled to ship next month. A 4,092-processor system has a peak hardware performance level above 1G floating-point operations per second (FLOPS) and starts at $500,000. The 8,192-processor version has a peak performance level above 2G FLOPS and is offered fully configured at $1.06 million.

The company also unveiled a Fortran compiler intended to make the systems embrace a wider volume of the supercomputer market.

Company President Sheryl Handler said the new machines, with what she called the lowest price/performance point in the supercomputer industry, are targeted specifically at the university market. Handler said she believes that it is vital for Connection Machines to be available on campuses, where the next generation of technical experts will get to work with them.

"We need to create an environment for people to accumulate software experience using the machines," said Thinking Machines Vice-President Richard Clayton, who acknowledged that the company's long-term goal is to move the machines out into the business arena.

DEC deal

To facilitate the push onto college campuses, Thinking Machines also announced a joint venture with Digital Equipment Corp. The firms will configure a CM-2A with a VAX front end at a special price and supply it to 25 universities. The schools will be required to submit research proposals that focus on data parallel supercomputing, and Thinking Machines and DEC will choose the recipients.

Thinking Machines claims to have 10% of the supercomputing market, second only to Cray. Handler said the company has installed 35 Connection Machines in 2½ years, and the number of users is doubling every year.

According to Richard Shaffer, a consultant at Technologic Partners in New York, CM-2A will not affect the supercomputer market very much. He pointed out that because the architecture and software of the Connection Machine is so vastly different from the market-dominant Cray, it will present little competition in the short run.

"Even people who have tried to do what Cray does have found it tough going, and the Connection Machine is not mainstream supercomputing," Shaffer said.

For data-intensive computing problems, massive parallelism allows a much faster approach to a problem. "The Connection Machine is just at the beginning of the power curve," said Steven Barnard, senior computer scientist at SRI International, Inc. in Menlo Park, Calif. "I'd much rather hitch my carriage to this kind of computing."

The CM-2A's *peak hardware performance tops 1G FLOPS*

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NEWS SHORTS

OSI groups agree to cooperate

IBM may finally join the Open Systems Interconnect/Network Management Forum, and users may see speedier progress toward standards-based interoperability because of a three-way agreement finalized last week between the forum and two other major standards bodies: the Corporation for Open Systems and the European Standards Promotion and Application Group. IBM declared several months ago that a formal agreement among the three bodies was its prerequisite for becoming a member of the forum, which hopes to ensure consistent protocol sets and eliminate functional redundancy through the pact.

.....

Hello, this is the Pope

Two California companies recently introduced nearly identical services that can deliver the voice of Pope John Paul II to anyone — anyone with a few bucks, that is. Voicemail International, Inc. and Laserquest, Inc. each developed systems that transmit the Pope's daily messages, which are also heard on the Vatican's radio station. With Voicemail International's service, a caller uses an international phone number to link into the Vatican's voice-mail system and is charged a regular international call rate. Laserquest uses a 900 telephone number, charging 95 cents per minute. The company picks up the radio broadcast from the Vatican and then provides the taped message to callers.

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Transportation head pans merger

U.S. Secretary of Transportation Samuel K. Skinner last week urged the U.S. Attorney General to challenge the proposed merger of the American Airlines and Delta Air Lines computerized reservation systems (CRS). Skinner said that the structure of the proposed merger of the CRSs "poses a substantial likelihood of producing an adverse effect on airline competition."

.....

No sign Mueller will be tried in U.S.

Although accused "techno-bandit" Richard Mueller surfaced in his native West Germany two weeks ago, it seems unlikely that U.S. authorities will be able to bring him to trial. "He's a German citizen. It would be nice if he were extradited [to the U.S.], but it doesn't look like that is going to happen," a source at the U.S. Customs Service said. Mueller was indicted last year for the alleged illegal diversion of Digital Equipment Corp. VAX computers to the Soviet bloc.

.....

Mips to supply Pyramid

Pyramid Technology Corp. may give commercial legitimacy to Mips Computer Systems, Inc.'s Unix-based reduced instruction set computing systems. Last week, Pyramid announced that it would sell Mips' computers on the low end of the company's commercial Unix line. Pyramid had hoped to reach such an agreement with Sun Microsystems, Inc., "but that fell apart," according to Richard Rehb, Pyramid's director of strategic marketing.

.....

RTI upgrades Ingres

Relational Technology, Inc. last week upgraded its Ingres SQL relational database management system with an enhancement of Ingres' professional applications development tools.

.....

Census taker: Smile

By the end of the century, if you live in the Kingdom of Thailand, government officials will know who you are, where you live *and* what you look like. Control Data Corp. earlier this month won a contract from Thailand's Ministry of the Interior for two of its Cyber 900 mainframes and IM/DM relational database to handle the innovative census program, which will store information on 60 million people and 10 million Thai households. The mainframes will be hooked to optical disks containing photographs of all Thai citizens beginning in 1991.

Acquisitions take toll on IS

BY CLINTON WILDER
CW STAFF

The top information systems executives at Emhart Corp. and Chicago Pacific Corp., two major manufacturing companies acquired in recent months, will leave their jobs this summer when their corporate IS departments are eliminated by the respective acquisitors.

David Dandro, 52, vice-president of IS at Emhart, will depart July 1 when Emhart closes the corporate office housing Dandro's centralized IS consulting group. Black & Decker Corp. won a bidding war in March to acquire Emhart for $2.8 billion.

H. R. Ingemansen, 62, will retire as Chicago Pacific's manager of IS June 1 after a 22-year career at the company. Chicago Pacific, a former railroad now primarily in the home appliance and furniture business, was purchased by Maytag Corp. in a $1 billion friendly transaction completed in January.

Emhart and Chicago Pacific have decentralized IS operations with small corporate staffs.

Emhart, with $2.76 billion in 1988 sales, has 25 IS employees at its Farmington, Conn., headquarters, and Chicago Pacific, a $1.5 billion firm, has just two corporate IS executives directing a worldwide staff of 150.

Dandro said he will not seek another similar position right away. Before joining Emhart seven years ago, he worked in IS for three companies that have been either acquired, taken private or broken up — Borg Warner Corp. [see story page 63], JI Case and Allis-Chalmers.

"Corporate America is undergoing a lot of change, and [IS executives] are no different from anyone else," Dandro said. "There certainly aren't bad feelings. That's life in the big city."

Baltimore-based Black & Decker had a changing of the IS guard last September when Vice-President of Worldwide IS Sidney Diamond replaced Vice-President of MIS James Barcus. Diamond refused to comment on IS changes at Emhart.

Maytag will close Chicago Pacific's downtown Chicago office, which employs 75 people, only a handful of whom have chosen to relocate to Maytag's headquarters in Newton, Iowa, Ingemansen said. Dale Wilke, Maytag's director of corporate IS and telecommunications, will take over responsibility for Chicago Pacific IS. Wilke said IS employees at Chicago Pacific's subsidiaries, of which Hoover vacuum cleaners is the largest, should not be affected by the merger.

Senate takes tentative look at virus legislation

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — U.S. Sen. Patrick J. Leahy (D-Vt.), taking a cautious approach toward antivirus legislation, last week asked the Federal Bureau of Investigation to provide a recommendation on whether existing federal laws are adequate for prosecuting computer virus attacks.

Leahy, chairman of the Senate Subcommittee on Technology and the Law, made the request during a subcommittee hearing aimed at exploring the scope of the virus problem.

The star witness was Clifford Stoll, a computer astronomer who had experience with the Internet worm last November [CW, Nov. 7] and discovered a West German computer spy ring [CW, March 6].

Stoll explained how the hackers — and around-the-clock efforts to trace them — had disrupted his astronomy research, his private life and his trust in the computer community.

He stressed that the Internet worm, which clogged his computer at the Lawrence Berkeley Laboratory and prevented him from doing research for two days, was no harmless prank.

Leahy *is not rushing to pass an antivirus law*

Stoll likened the hackers to "vandals . . . who want to wreck our communities."

Leahy said malicious viruses are criminal and intolerable, but he added that he is in no rush to pass legislation that might inadvertently stifle experimentation and the free exchange of information over computer networks and bulletin board systems. "We are probably wise to go slowly and carefully," he said.

Sen. Gordon J. Humphrey (R-N.H.) urged somewhat faster action. After receiving expert testimony, "we should promptly turn our attention to whether specific legislation is needed to close any dangerous gaps that may exist in our federal computer security laws," he said in a statement.

No federal statute specifically addresses computer viruses, although two antivirus bills have been introduced in the House and some virus cases can be prosecuted under the Computer Fraud and Abuse Act of 1986.

FBI officials testified that they intend to vigorously prosecute hackers who plant computer viruses, but they added that the job is exceptionally difficult.

Kenneth Walton, deputy chief of the FBI's criminal investigative division, said virus cases are tough to investigate and prosecute because existing statutes require the authorities to prove criminal intent and damage. "Those are the two swing points that make investigations very difficult," he said.

Viruses often are designed to prevent detection, and they may undergo various permutations and spread over wide geographic areas, said FBI Director William S. Sessions. In addition, system owners are sometimes more concerned with repairing the damage — or hiding their embarrassing lack of security — than with prosecuting the offender, officials said.

Sessions said the FBI has investigated only two virus cases. One involved the hacker known as Shadow Hawk, who was sentenced in February [CW, Feb. 20], and the other is the investigation of the Internet worm.

Sessions asserted that FBI agents have enough computer literacy to identify computer crimes and call in outside technical experts to investigate. However, he said, it may become a problem getting enough experts to deploy "if this potentially explosive new area of computer activity continues to expand."

CORRECTIONS

A May 8 article on Japan's software push incorrectly identified Jack Plimpton's company Japan Entry as located in Boxboro, Mass. It is in Boxford, Mass.

Precision Software, Inc. in Irving, Texas, was incorrectly listed as Precision, Inc. in the PCs & Workstations New Products section in the May 15 issue.

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CA announces a banner year

BY NELL MARGOLIS
CW STAFF

GARDEN CITY, N.Y. — Glowing fourth-quarter and year-end results released by Computer Associates International, Inc. last week established the company as a smart bet to continue to be strong with or without acquisitions, analysts said.

At $1 billion, revenue for fiscal 1989 increased 45% over the $709 million logged by CA the preceding year. Net income of $163.5 million jumped 61% from the previous year's $101.8 million.

For the quarter ended March 31, CA reported $311.4 million in revenue — a 51% rise over last year's comparable quarter — and a 63% leap in net profits, from $33.8 million in fourth-quarter 1988 to $55 million. The firm also announced a two-for-one stock split.

"These figures are even better than many of us were expecting," said Barbara Isgur, an analyst at Needham & Co.

"We have every reason to believe that next year will be as good or better than the one just closed," said Montgomery Securities analyst David Bayer.

In a prepared statement, CA President Anthony W. Wang claimed, "It is clear that Computer Associates continues to be able to comfortably maintain an internal growth rate of 30% to 35% without acquisitions."

Wang was equally emphatic in citing the firm's yearly and quarterly performance as evidence of the ease with which CA has integrated Applied Data Research, Inc., acquired last November, into its business.

Analysts agreed that Wang is hedging his bets with regard to possible upcoming acquisitions. "He wants to remind people that CA can grow quite nicely either way," Bayer said.

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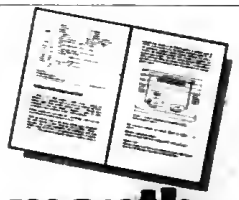

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Daewoo bid awaits nod from court

BY ALAN J. RYAN
CW STAFF

BOSTON — There may be relief on the way for creditors of Leading Edge Products, Inc., once a leading distributor of IBM Personal Computer clones but now under Chapter 11 bankruptcy protection.

Last week, a Daewoo Telecom Co. official confirmed that the South Korea-based company has agreed in principle to acquire Leading Edge. Daewoo will fund the trustee's plan for reorganizing Leading Edge, said Young Han, general manager of Daewoo's Boston office. Daewoo manufactures the Leading Edge PCs.

The plan will have to be approved by the bankruptcy court and the company's creditors.

Leading Edge creditors include its dealers, who claim they are owed $12.5 million for advance payments they made for computers that were not shipped. Other creditor claims total $1.8 million. Under the Daewoo plan, the dealers would receive the computers they are owed or would have the option of a cash settlement.

Leading Edge has lost about 100 of an estimated 400 authorized dealers, Han said. "Sales are ramping up and many of the dealers are coming back" because of the Daewoo proposal, he maintained.

In the meantime, the court-appointed trustee for Leading Edge, Stephen Gray, has been getting some shipments out to dealers.

Han said that Daewoo began shipping computers to Leading Edge dealers several weeks ago, adding that between 5,000 and 6,000 units had been shipped as of last week. He said new order shipments will begin at the end of this month.

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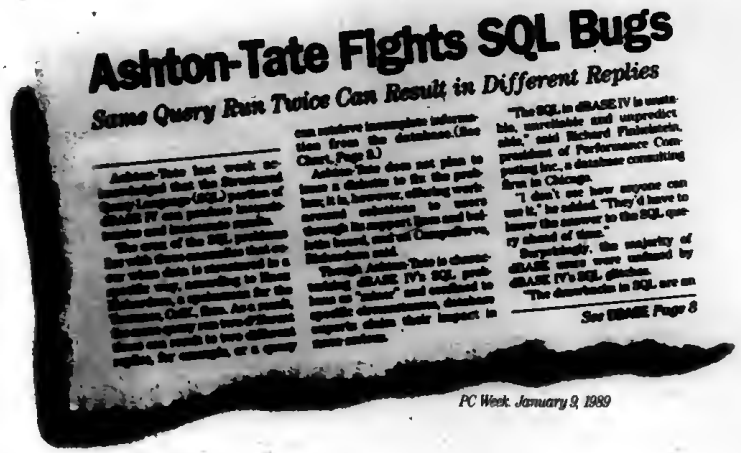

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PC Week, January 9, 1989

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IBM backs Carnegie spin-off

BY AMY CORTESE
CW STAFF

PITTSBURGH — A new company funded by IBM was formed last week to develop Unix-based distributed computing and transaction processing software.

Transarc Corp. will base its products on research conducted at Carnegie-Mellon University's Information Technology Center.

Alfred Z. Spector, former director of the center and associate professor at Carnegie-Mellon's School of Computer Science, is president of the new firm.

Neither IBM nor Transarc would disclose details of IBM's investment other than to say that IBM will have a significant equity interest. An IBM spokesman said that the investment will result in leading-edge technology for IBM's AIX customers.

The deal follows in the wake of several IBM investments in technology firms during the past several months, including Metaphor Computer Systems, Inc. (see story page 121) and Next, Inc.

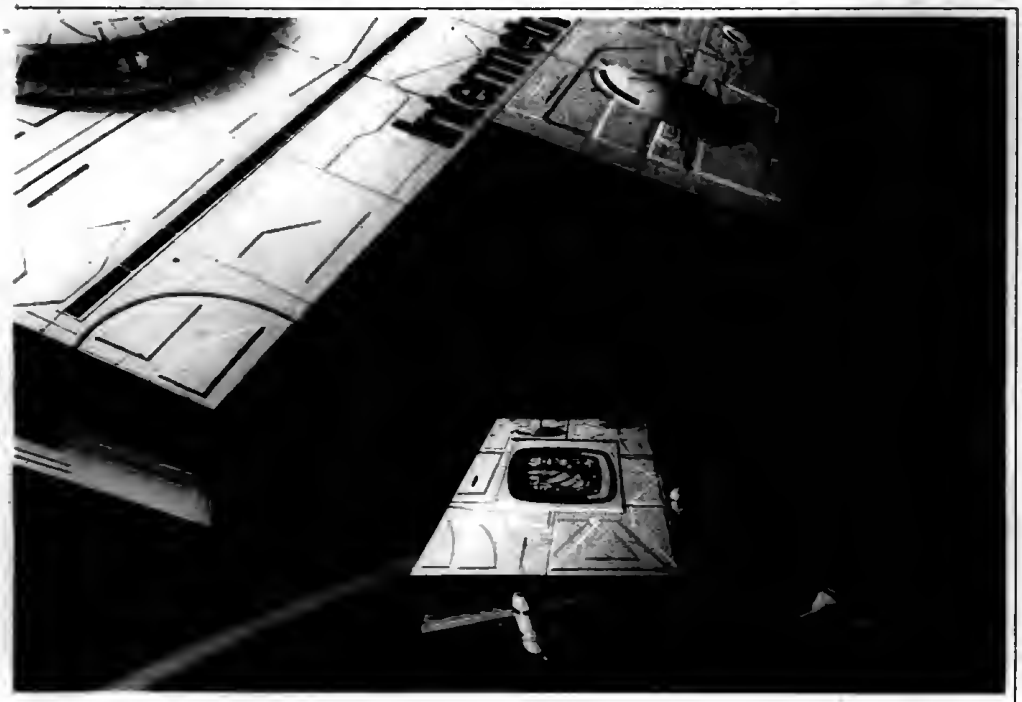
Transarc will capitalise on two university research efforts. One, the Andrew File System (AFS), is a six-year joint effort between IBM and Carnegie-Mellon to connect the university's many computers and is used by several universities today.

Transarc will also develop distributed transaction processing software based on Camelot, the Carnegie-Mellon Low Overhead Transaction System. The ideas stemming from that project will be the basis of a product for developers to build transaction processing applications.

Philip L. Lehman, Transarc's director of marketing for file systems, would not say when Transarc will have products on the market, but he indicated that the company will be announcing something "in a month or two." The firm has a staff of 20 and expects that number to grow to 60 within a year.

Transarc will develop products for many versions of Unix, although it specifically named AIX.

Lehman said the company will be heavily involved in the development of Unix standards and hinted that it will join one or more of the standards groups, such as X/Open Consortium Ltd.



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Unix rivals get together

A growing attitude of cooperation among rival Unix groups reached new heights last week as X/Open Consortium Ltd. admitted the Open Software Foundation (OSF) and Unix International as full board members.

Both the OSF and Unix International have supported X/Open since their inception, but their joint membership formalizes those commitments and boosts X/Open's role as a unifying force in setting Unix standards.

The OSF's initial bid for membership earlier this year stirred controversy among the X/Open board — whose constituency is split almost evenly between OSF members and Unix International members. Some opposed the OSF's acceptance because its members are already represented on the X/Open board individually, and acceptance would give the OSF an unfair advantage, they said. But the inclusion of Unix International maintains the status quo.

The action solidifies support of X/Open's Common Application Environment (CAE), a set of comprehensive standards intended to provide applications portability across all systems that conform to those standards. CAE is widely supported in the U.S. and internationally and has been specified for major government procurements. Ultimately, CAE could provide portability across any underlying operating system.

AMY CORTESE

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Boeing joins integrated network ranks

BY ELISABETH HORWITT
CW STAFF

SEATTLE — Boeing Computer Services last week outlined its intentions to join the integrated network management fray by the middle of next year with multivendor network management software.

A key means by which Boeing hopes to differentiate its product is "linking network management applications to the business process, closing the gap between business strategy and the network that supports it," according to Boeing group manager Christopher Slatt.

For example, the system will be able to determine what kind of business communication or user will be affected by the failure of a particular line or device so that managers can prioritize resources for fixing the problem, according to Slatt.

Rather than trying to "provide a better Netview," Boeing will provide software to complement and integrate leading proprietary systems as well as those based on the Open Systems Interconnect (OSI) standard, Slatt said.

Boeing developed a system for the National Aeronautics and Space Administration (NASA) that collects data from a variety of network management systems and displays key information at one console while storing less time-sensitive data in a common database, said Richard Helmick, division chief of systems engineering at NASA's Marshall Space Center.

Boeing's planned support of OSI is crucial to NASA, which is "trying to posture our network to support OSI routing as soon as we can," Helmick said.

Boeing plans to introduce a series of software modules to manage faults, performance, configuration, user administration, inventory, service-order processing and financial areas of networking, the vendor said.

Burger King cooks up new system deals

BY ALAN J. RYAN
CW STAFF

MIAMI — Burger King Corp. is moving forward in its multimillion-dollar implementation of point-of-sale (POS) systems and back-room computers in its 800 company-owned restaurants.

In separate agreements, Burger King has signed pacts with IBM and NCR Corp. to provide systems for the restaurants. Each vendor will supply systems for approximately 400 stores, with an average price tag of $25,000 per store, a Burger King spokeswoman said.

Burger King's 5,000 franchisees will be able to purchase the systems from either IBM or NCR at volume-discount prices.

The POS systems were designed to keep managers informed about their restaurant operations, providing sales data and administrative information.

Plans for the $20 million revamping were put in place by Bob Forte, former vice-president of MIS at Burger King, who recently left the company [CW, April 10]. The new systems will replace the current one, which uses microphone, coded-receipt and voice communication from the order-entry counter to the kitchen.

Operators will enter the customer's order into a workstation. The order is then transmitted to a crew member in the kitchen, who will view it on display terminals in complete words rather than a coded description, said Daniel F. Barranti, director of operations development at Burger King.

The IBM POS terminals are based on the firm's Personal System/2 Model 30, as are the back-room computers for managers. The NCR machines are NCR 2760 POS terminals and NCR PC 3392s for the managers.

HP loses wind in second-quarter sails

BY J. A. SAVAGE
CW STAFF

PALO ALTO, Calif. — Unable to keep up with product orders for its workstations, personal computers and HP 3000 reduced instruction set computers, Hewlett-Packard Co. last week reported that second-quarter profits increased only $1 million more than the same period a year earlier.

Computer products accounted for some of the poor earnings, but a significant reason for the poor performance was that medical products were promised but not shipped in the last quarter, according to the firm.

Orders for workstations and PCs were stronger than HP expected, and customers stretched out delivery schedules for minicomputers, HP said.

One analyst took a dim view of the explanations for the negligible increase in profits to $201 million. "The firm fell short by $89 million. Even if it was able to deliver the PCs and workstations and more HP 3000s, it wouldn't have that much effect on the bottom line," said Adam Cuhney, an analyst at Kidder Peabody & Co. in San Francisco.

More shipments would not have offset deep discounts in the HP 3000 Model 950, Cuhney said. In December, HP announced price hikes on the minicomputer, but customers who ordered them prior to the end of January received a rebate. However, many customers who did order opted not to take delivery until July, so the company has yet to make revenue on them, according to a spokeswoman.

Analysts such as Ed Bierdeman at San Francisco-based Hambrecht & Quist, Inc. anticipate increased profits in the computer side of the firm over the long-term.

Discounts to dealerships contributed to the low earnings, the company said. HP is selling more computers through dealers, and thus, the percentage of lost revenue because of discounts is growing. An HP spokeswoman said that the firm plans to continue those discounts.

Expenses grew by 17%, largely because of the addition of 2,000 employees, while revenue grew by 15% to $2.8 billion. With the acquisition of workstation maker Apollo Computer, Inc. this quarter, HP will add another 4,600 employees.

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COMPUTER ASSOCIATES

IBM plans PS/2 plant in China

BY DAVE NOBLE
IDG NEWS SERVICE

HONG KONG — As part of a thrust to boost its presence in China, IBM is negotiating a deal that could see its Personal System/2 personal computers being manufactured in China.

Although unwilling to discuss details of the deal, IBM China/Hong Kong Managing Director Bob Savage confirmed earlier this month that negotiations were under way and said an agreement was expected to be in place before the end of the year.

It is proposed that IBM will enter into a joint venture, the exact nature of which is unknown, with a Chinese firm to assemble various models of the PS/2 family. The systems would have Chinese-language capability and would be marketed only in China, Savage said. There are no plans for export at this stage.

While IBM enjoys a reasonable market share in China, with more than 200 of its 370 architecture systems installed there, the industry giant plans to expand its operations "as and when we believe it is profitable to do so," Savage said.

The company already has three third-party service centers that install and maintain equipment in China, the largest operated nationally by Brightstar, a subsidiary of the State Economic Information Center.

University scientists crack high-tech welfare data shell

Editor's note: This is one in a series of profiles of nominees for the Computerworld *Smithsonian Awards, recognizing individuals and organizations that have achieved outstanding progress for society through the use of information technology. The awards will be presented in a ceremony held June 20 in New York.*

BY SHARON BAKER
CW STAFF

Since 1983, data that could show connections such as those between marriage rates and welfare and other government-funded programs sat largely untouched in a computer at the U.S. Bureau of the Census. Although most researchers knew the information existed, they had no way to access or analyze it.

All that started to change when two scientists at the University of Wisconsin in Madison developed a prototype four years ago to improve storage, access and retrieval of that data, part of a study called SIPP.

SIPP, which stands for Survey of Income and Program Participation, is a quarterly survey conducted by the Census Bureau that monitors the short-term economic changes of respondents. Its primary purpose is to determine how people move on and off welfare and what can be done to make government-funded programs more efficient.

"There was a growing recognition that mass amounts of data were collected, but there was no control," said Alice Robbin, one of the prototype's developers. "The antiquated data processing systems of the federal government are extraordinarily serious. This issue of inaccessible data was becoming visible to everybody."

Robbin, an associate scientist at the university's Institute for Research on Poverty, and her partner, Martin David, knew that current technology could ease access to large-scale data sets such as SIPP. With the help of $1.17 million in grants — $677,000 of which was applied to direct costs — from the National Science Foundation and the Sloan Foundation, they connected a variety of technologies into one prototype, known as SIPP Access.

The pair specifically selected SIPP for the project because of its massive nature. The 1984 study alone contains nearly seven million units of analysis and about 20,000 data elements that include detailed information about a respondent's employment, education, health status, fertility, household composition and any employment and government program participation. That information is then stored on more than 30 tapes, totaling about 2.2G bytes of data in nine separate hierarchical files, Robbin said. An additional 300M bytes are entered into the statistical database every four months.

DAVID JOEL

Robbin *makes census data manageable*

To make that information more manageable, Robbin and David first restructured the collected data into a relational database management system using Digital Equipment Corp.'s VAX and microcomputer versions of Relational Technology, Inc.'s Ingres and Oracle Corp.'s Oracle.

"Once you think through how to organize the data, the retrieval is extremely rapid," Robbin said. "That's the essence of the power of this technology."

Using relational theory, the storage requirements for the entire data set were reduced by 75% — from 2.2G bytes to 500M bytes — without loss of information, Robbin said. The original 20,000 elements were restructured into 8,000, and many cross-sectional variables were reorganized into tables.

The RDBMS reduces the time required to develop and complete research using SIPP data. But that is only one part of the prototype. Three networks help bring the database to its users, which include researchers, analysts, government officials, faculty members and students. Ethernet connects campus computers with the university's Physical Sciences Laboratory, where the mainframe RDBMS is located, while Bitnet and Arpanet allow users to transfer files from the mainframe to their home computers.

In addition, the use of an optical archive storage disk eliminates the high cost of storing such massive amounts of data on magnetic disk. "Linking all of these technologies is what makes SIPP Access so powerful," Robbin stressed.

Small version

The pair also developed a personal computer test database that contains a 2% random sample of SIPP and its data elements. The smaller database eliminates the cost of using the complete study to determine if it contains the data a researcher needs.

The PC database was beta-tested in August 1988 at six sites, including Cornell University and the Research Triangle Institute in North Carolina.

Since SIPP is a public survey and SIPP Access is funded with public grants, the prototype is available to anyone. To get into the database, all a user needs is a purchase order to the University of Wisconsin's computer center for computer time.

Robbin said that 150 people from across the country have been trained through workshops to use SIPP Access. Thirty people have actually conducted research and generated results with the help of the prototype.

Robbin and David's work on SIPP Access is slated to end in September, when funding runs out, but both hope that does not mean the demise of the prototype. Earlier this month, they met with Census Bureau officials and proposed that the technology be transferred to the bureau. Robbin hopes to have an answer from the bureau by the end of next month.

"It's clear that the RDBMS needs to be installed very early in the data design and collection stages," Robbin said. "That would really increase efficiency and improve productivity."

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SIPP Access is making the lives of researchers and analysts, who rely on complex government surveys, a little easier.

Harlene Gogan, research demographer at the Research Triangle Institute, said she used to spend two to three years just organizing available data to conduct her research. With SIPP Access, she has cut that time down to six months. "It's not just calendar time that's being saved," she emphasized. "It's computer costs and the costs for the person who's doing the programming. We're talking about an entirely different mechanism for going after the data."

SIPP Access is of particular importance to government officials, who need statistics quickly to back up various reports or speeches. "Most questions that are being asked of legislative assistants and research arms of the government are large questions of public policy," said Alice Robbin, who helped design the prototype. "They are now spending six months to two years trying to organize data in files that can be analyzed [with the RDBMS] in a couple of hours to a few days."

– SHARON BAKER

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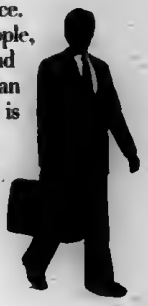

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EDITORIAL

Super quandary

SURVEYING THE NEWS of the past month, you could easily conclude that the U.S. supercomputer market is a mess. But you would first have to determine whether there is any real market left at all.

Last month Control Data decided that the R&D costs of ETA Systems, its supercomputer division, were too much for the cash-hungry parent to bear, so it folded that spin-off and left a domestic supercomputer field of one — market leader Cray Research, which has logged three of every four supercomputer sales worldwide.

Last week it was Cray's turn to rattle the windows with a sonic boom of its own. The company announced it will spin off development of its sophisticated, experimental Cray-3 machine into a new and separate firm, to be headed by industry pioneer Seymour Cray.

The reason? The R&D costs of the Cray-3, which was to be the stalwart in the company's defense against an ardent effort by three Japanese companies to crack the supercomputer market, were sapping valuable resources. The parent said it would provide the new Cray Computer Co. with up to $150 million in assets and cash to get set up. You get the feeling that Capt. Bligh had a better chance when he shoved away from the *Bounty* in the middle of the South Pacific in a 14-ft. dingy.

Certainly Cray Research acted in the fiduciary interests of its shareholders in jettisoning the Cray-3 to focus on more commercially viable projects. But what made these projects extraordinary, or so we are told, is that they are in the realm of "strategic" product efforts — products that make a vital contribution to our national defense, among other things. Supercomputers are the foundation for some of the Defense Department's most sophisticated weapons.

So while the pursuit of these projects may have been all well and good for the government and for contributing to the defense effort, they weren't contributing to the bottom line for CDC and Cray Research. On the contrary.

Now with CDC out of the supercomputer business and with Cray relegating its most advanced supercomputer efforts to the status of a spin-off, several questions are raised. Just how strategic is the supercomputer market to U.S. interests? If it is strategic, what are the implications of a single domestic supplier? And, perhaps most critically, why is it that Japan's Hitachi, Fujitsu and NEC corporations are plowing ahead with their supercomputer development efforts at a time when the U.S. market is crumbling?

If there's one thing U.S. companies have learned in the past 20 years, it is that once they forfeit leadership in a particular market they don't get it back. What is needed is a comprehensive investigation into just how vital a viable domestic supercomputer market is to the nation.

If the determination is that the market is indeed strategic, federal government will have to make supercomputer R&D a lot more attractive than it is today — or be content with reliance on foreign suppliers tomorrow.

LETTERS TO THE EDITOR

On the run again: In Depth reviewed

The "Running in crisis mode?" article [CW, April 17] begins with a claim that IS has been too reliant on products — computer-aided software engineering (CASE), fourth-generation languages, etc. — to solve its problems. The article goes on to state that more attention to the people side of IS will bring the industry back on track.

Unfortunately, he ignores the third "P" — process. Inaccurate and incomplete planning is one of the major causes of project cancellation and IS malaise in general. Software developers consistently make planning errors that other project-oriented industries such as aerospace and construction would not tolerate:

- Work plans do not include time for meetings or meeting preparation.
- Review cycles lack time for incorporating review comments into the product.
- Planned productivity levels (useful hours per day) are consistently unattainable.
- Level-of-effort estimates are consistently based on best-case assumptions.
- Junior staff members are assigned tasks planned for senior staff without any adjustment to costs or schedules.
- Schedules do not take into consideration the fact that resource constraints typically place 100% of the activity on the critical path.
- Status reporting techniques are normally subjective (percent complete) rather than objective (earned value).

The fact is that the relationship among product, people and process is multiplicative — you have to do all three well. We need CASE. We need better people management. But we also need accurate plans, schedules and estimates. If we do not invest equally in process improvements, we will have happier programmers developing the wrong systems faster.

William R. Duncan
President
Duncan Associates
Lexington, Mass.

Bravo on "Running in crisis mode?" With the advent of end-user computing, data processing was transformed into information systems and was forced out of the computer room and into the spotlight.

For some professionals, it has been a stimulating journey that has thrust them into the senior ranks as strategic managers. For others, it has been a frightening trip that has forced them to give up their technocratic jargon in favor of a more civilized and accessible dialect.

But we still have a long way to go. As your article points out, we are at the point where we must focus more and more on our most important resource: our people.

The solution to the productivity problems seen in IS departments (for that matter, in the entire U.S.) is not in the latest technological tools. We will find the solution when we discover how to become partners with the business and also with our staff. Only then will we have created the kind of environment in which there is no substitute for excellence.

Dennis L. Duffy
Senior Vice-President
Director of MIS
Burson-Marsteller
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Inopportune-ity

"An irresistible oppor-tune-ity" [CW, April 17] is hardly newsworthy. A vast market of computer-driven music software currently exists, with an installed base in the tens of thousands. The fact that some MIT researchers had spare computers lying around, which they decided to use for music applications, is of little interest in itself.

A variety of off-the-shelf music programs are available, with applications ranging from scoring to algorithmic composition. One could not tell from the article precisely what MIT's software was intended for, let alone determine its significance. If MIT had developed another scoring or sequencing program, it is of little more significance than if it had developed another word processor.

Granted that the bulk of your readers have little knowledge of the current crop of music programs, but a more comprehensive explanation of the software's function might have shed more light on what I believe the article was trying to accomplish.

While it is heartening to see articles about music software in your pages, I believe that your readers would be better served by focusing on people who are writing truly significant software in this area.

Roy Altman
DP Consultant
New York

Computerworld *welcomes comments from its readers. Letters may be edited for brevity and clarity and should be addressed to Bill Laberis, Editor,* Computerworld, *P.O. Box 9171, 375 Cochituate Road, Framingham, Mass. 01701.*

How merger types affect users

DALE KUTNICK

As a result of three years of consolidation in the computer and data communications industry, lawyers, investment bankers, merger and acquisition specialists, golden-parachuted executives and a handful of savvy stockholders have made millions by playing the high-tech takeover sweepstakes.

Moreover, it appears that information systems industry merger and acquisition activity will continue for at least the next two to three years.

While some of the future merger and acquisition combinations will resemble "murders and acquiescence" — a la the recent Prime and MAI fiasco — most will take a more positive form, as has the proposed Apollo-Hewlett-Packard deal.

The acquisitors will increasingly be large foreign or multinational concerns such as Hitachi, Fujitsu, Siemens or Olivetti. These mergers will often, for political and marketing reasons, be accomplished in concert with large U.S. partners — as was the case with the recent Hitachi/Electronic Data Systems acquisition of National Advanced Systems from National Semiconductor.

A depressed dollar and depressed stock prices make U.S. high-tech companies with any reasonable installed base attractive candidates.

A key question is, what happens to the acquirees' existing user base? Will the "new" company support proprietary hardware and software? At what level and for how long?

Kutnick is president of Meta Group, Inc., a market assessment/consulting company in Westport, Conn.

Purges inevitable

Some housecleaning of midlevel and upper management as well as administrative and support staff will occur. Depending on the financial condition of the parent company and the requirement to consolidate operations, this reduction could take six to 18 months. Too often, it is customer support and new development that suffers in these purges.

The level and length of ongoing support is almost directly linked to the purpose of the acquisition, be it financial consolidation, strategic technology capture, strategic market positioning or installed-base acquisition.

In practice, there are usually various combinations of these four motivations.

Strategic technology capture is the most benign of merger and acquisition activities and in fact usually benefits the user base. A stronger, better-financed suitor pushes forward a technology it requires — for example, Apple's acquisition of Network Innovations and Orion, and Unisys' takeover of Timeplex and Convergent Technologies. Many of these types of activities should occur in the early 1990s in the PC software business.

Strategic market positioning and installed base capture can have mixed results for users, depending on the financial health and strategy of the suitor. In the case of HP's pending Apollo acquisition, technical workstation market positioning as well as installed base capture were clearly the driving forces — although the financials were also attractive. Apollo's 68000 and Unix-based users will benefit from HP's superior support and growth paths; Apollo Domain users will be given multiple "conversion sleds" to ease Unix migration.

On the other hand, while Computer Associates' acquisition of Applied Data Research last year was motivated by installed base capture and tactical market positioning, financial consolidation was an even greater incentive.

CA's "software supermarket" approach often leaves users on the short end of support. Aging products are left to wither and collect maintenance revenue. While difficult for users to digest, CA's approach will serve as a model for software companies in the 1990s.

Clearly, the most dangerous type of acquisition from the perspective of the user is one calling for financial consolidation. In this case, the suitor believes that the target's breakup value is greater than the whole. This was certainly the case with Asher Edelman's acquisition of Datapoint and MDS a few years back. It will undoubtedly be the case when someone acquires Control Data in the near future.

MICHAEL McLAUGHLIN

The primary asset in these situations is an installed base — usually based on proprietary technology — that generates service and maintenance revenue greater than 40% of total revenue. This ensured cash flow gives the suitor tremendous financial leverage, and with appropriate cost-cutting, it can guarantee a three- to five-year payback on the initial investment.

Another extremely valuable asset is real estate, which is often undervalued on companies' books. Again, curtailing operations and selling off properties can yield substantial short-term profits, especially in hot real estate markets such as Silicon Valley.

In acquisitions in which the primary purpose is financial consolidation, milking the installed base will begin almost immediately. Support and maintenance prices will generally rise, while service levels ebb. Support for proprietary hardware and software, especially new research and development, will be drastically curtailed.

In situations like these, it is often too late for users to run for cover without incurring significant expense. This is why future vendor selection will require closer inspection of a providers' financial condition. A growing percentage of revenue from maintenance and service should raise danger signals.

The IS industry will continue to be a dynamic one, but many 10- to 20-year-old companies have grown too corpulent to keep pace. Acquisition activity will increase during the next two to three years, and a lot of it will be for financial consolidation. IS management must become more sensitive to the financial underpinnings of its vendors and of the industry in general.

Decoding the germane obfuscating lexicon

MICHAEL B. COHN

Users and clients have started to figure out what's going on. They've been buying personal computers. Reading manuals. Even putting paper into printers all by themselves. Some of them are finally starting to figure out a little bit about data processing.

Fortunately, we in MIS are still able to keep them off balance. We invent new abbreviations. Baffle them with buzzwords. Toss around a few techno-phrases, and they become humble once again. Tell them it will take two weeks to do a thorough network debustication. Or that they ran out of space in their ACLU. They scratch their heads while you get to go home at 4:30.

But I'm going to blow the whole thing. I'm about to expose some of our most choice high-tech jargon and even translate each awe-inspiring phrase into plain English. I hope no one gets too upset about this. What's the worst that could happen? Nobody pays attention to us anyway.

Cohn is a quality assurance representative based in Atlanta.

Assessments of our milestone tracking, productivity data and projected buffer consumption indicate that we must continue to focus on the critical-path task requirements.
Translation: *We're in trouble.*

We've level-set on our resource availability and determined that the original estimate of budgeted costs and funding targets are only partially attainable.
Translation: *You're in trouble.*

The problem is just about licked. We've contacted some of our big guns on this, and they specialize in leading-edge technology and architecture.
Translation: *Quick, call the Help desk.*

That request is not germane to the original scope of the project, but I could have a few of my people look into it. It'll cost you a few weeks of billable time, but we'll come back with a solid proposal.
Translation: *It can't be done.*

We're familiar with this obstacle, but the contingencies and variables need to be reanalyzed to ensure that the previous solution is applicable.
Translation: *We can't remember what we did last time.*

We'll be right down to take a look at your problem as soon as we put out this fire.
Translation: *No.*

We ensured that the system performed only the functions and features that were documented in the specifications or requested by users during weekly status meetings.
Translation: *It's not our fault.*

The methodology we recommended seemed practical at the time and was later reviewed and agreed to by user management.
Translation: *It's half our fault.*

We made significant errors during the needs requirements phase based on our interviews with the users' clerks and supervisors.
Translation: *It's all their fault.*

The documentation considers similar examples and applicable error codes but contains no specific references to our perceived situation.
Translation: *We can't figure out the manual.*

That system has always been so reliable, I'm quite surprised it would blow up in the middle of the night. I'm glad you called me; there must be a really simple solution.
Translation: *Fix it yourself.*

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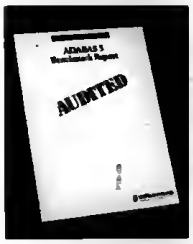

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SOFT TALK

Stanley Gibson

CASE: Still more talk than action

Poor CASE. It's still not ready for prime time.

The recent CASE Expo in Washington, D.C., was full of advice about computer-aided software engineering (CASE) but was generally short on real experience users had with it. For many users, however, the time for talk is past. They want to get on with it.

"This is a show for vendors and consultants," was the appraisal — a stinging condemnation, really — offered by a user in attendance. To be precise, the attendee was only a prospective user of CASE. What he wanted to hear was the experience of someone who has actually tried CASE and could recount the pluses and minuses of the experience. To be fair, he did attend one session that was led by a user, and he praised that one highly, but he longed for more.

There probably would have been more user-led seminars if the show's organizers could have found users to lead them. That it was not possible to do so means that CASE is still in its infancy, That may not be a surprise to everyone, but it is odd that a technology so widely acclaimed has still not really caught on.

While the CASE Expo was short on concrete user experi-

Continued on page 31

Sound of silence greets new IMS release

ANALYSIS

BY STANLEY GIBSON
CW STAFF

What IBM regarded as proof of its intention to keep its 20-year-old database management system purring along under Enterprise Systems Architecture (ESA) has received a muted greeting from managers at large IMS shops.

IBM quietly announced IMS/ESA Version 3 Release 1 last October. This version features virtual storage constraint relief, a feature most needed by large users.

But the release is not for everyone — at least for now. "In June 1990, we'll go to IMS/ESA," said Jack Mellon, director of systems development at Ryder Truck Rental, Inc. in Miami. Before that, Mellon said, he plans to move to IMS Version 2 Release 2 next month. In the third quarter, he plans to install MVS/ESA on his IBM 3090 Model 400E. Mellon said he does not suffer from virtual storage constraint.

Shaku Atre at Atre/Computer Assistance in Rye, N.Y., estimated that 20% to 25% of IMS users may need it. "IMS customers have been using IMS for some time and may be pushing its limits," she said.

The release, which requires MVS/ESA and ESA-capable hardware, will not run on MVS/XA. It is not an upgrade from Release 2 Version 2, must be purchased separately and is priced 5% higher than its predecessor.

Release 3 Version 1 is currently being tried on an early-support basis and will undergo "managed availability," for those users with virtual storage constraints in October. General availability is scheduled for March 1990.

"We have looked at it but didn't see anything there that was really exciting," said Mike Schoenwald, manager of technical support at Trailer Train Co. in Chicago, a firm that rents freight cars to railroads. Currently running a 3090 Model 150E, he plans to move to MVS/ESA next month, saying that at 40,000 transactions per day, his is not the kind of high-transaction environment that benefits most from IMS/ESA.

A major change in the Release

Continued on page 31

Added attractions

IMS Version 3 Release 1 is intended to take advantage of the capabilities of IBM's ESA

Feature	
• DL/1 virtual storage constraint relief	▸ Moves database control blocks and buffers above 16M-byte line
• Log compression	▸ Compresses logging data, allowing more efficient use of space
• Improved hiperspace	▸ Allows VSAM data set buffers to be separated from buffers of other data sets

CW CHART JOHN WEBB

Product maintenance charges are boosted

BY JAMES DALY
CW STAFF

IBM recently announced an increase in the monthly or annual maintenance charge of dozens of products, giving customers an escape route from Corporate Service Amendment (CSA) maintenance contracts.

The price hikes on a wide variety of products, ranging from point-of-sale terminals to disk drives, become effective Sept. 1, although state and local governmental customers with fiscal years beginning June 1 will not be affected by the increase until June 1, 1990, IBM officials said when asked about the low-profile announcement.

Although most of the minimum monthly maintenance charge increases range from 6% to 8%, some have increased more than 11%. This has the potential to let customers void existing CSA contracts, which have a per-machine price increase cap that gives the customer the right to withdraw without a penalty charge if a machine's maintenance price is increased by more than 7% annually.

All CSA agreements also carry a 3.5% price increase limit, wherein if the total contract cost is increased by more than 3.5% annually, the customer also has the right to withdraw from CSA without a penalty charge.

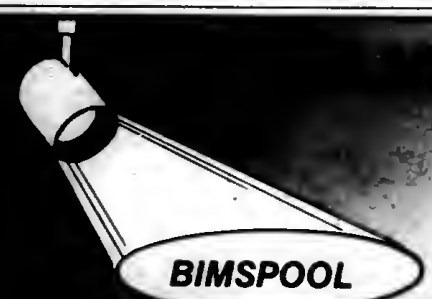
According to one maintenance consultant, IBM has not always treated these contracts as gospel. Last year, IBM exceeded the 7% per-machine upper limit on its 3080 family of mainframes, said Donald Goodspeed, vice-president of service and maintenance strategies at Meta Group, Inc. in Westport, Conn. But few customers bothered withdrawing because of the amount of paperwork and effort involved in exercising this option, he said.

IBM often downplays these announcements. "IBM is not going to tell anybody that they just raised the price more than allowable; they leave it up to the customer to figure it out," said John McCormack, a senior marketing representative at Sentinel Computer Services, Inc., a third-party maintenance firm in Oak Brook, Ill.

Earlier this year, IBM announced a revamped maintenance arrangement. Under its Serviceplan, the total contract price increase limit will be raised to 5%, while the per-machine price limit will be eliminated.

Inside

- Port authority dunks old mainframe for mini. Page 25.
- Users losing their shirts in DEC suit. Page 25.



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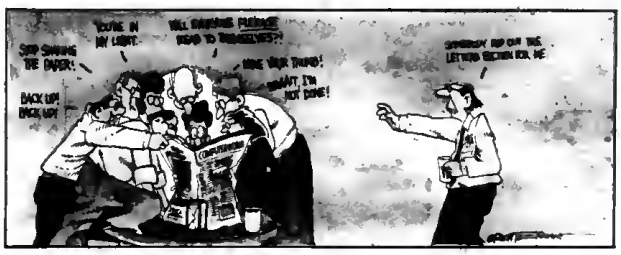

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Wang minis, PCs dock in Seattle

Port authority to throw older Burroughs mainframe overboard for Wang

ON SITE

BY PATRICK WAURZYNIAK
CW STAFF

SEATTLE — When the Port of Seattle decided to distribute its processing in 1980, it never looked back.

The port authority, which handles over one million containers a year on the eastern side of Puget Sound and manages Seattle-Tacoma International Airport, plans to complete a migration from its decade-old Burroughs Corp. mainframe to a fleet of Wang Laboratories, Inc. minicomputers and personal computers later this year.

During the past two years, the port's MIS group has been busily rewriting the last of its mainframe applications for use in the Wang environment and now has several Wang minicomputers.

The Port, which does most of its own software development, also has about 280 IBM-compatible Wang PCs and 565 terminals connected to the midrange systems through Wang System Networking.

The Port's mainframe, a Burroughs B4890 bought second-hand six years ago for $135,000, still holds three batch-process applications — accounts receivable, a work-in-progress schedule and a payroll system for the Port's 1,175 employees.

One reason cited for distributed processing was that the Port's mainframe — rated at only 0.6 million instructions per second in a box that held only 1M byte of memory — was running out of steam.

"There are a lot of PCs out there now with more memory," said Ted Hutton, who is the Port's systems manager and is responsible for running information systems' computers and overseeing its technical support.

"Back in 1979, these systems weren't that old," Hutton said of the mainframe. "We just saw the opportunity to save money on operations and to reduce our risks. We wouldn't have all our eggs in one basket in one computer room, and we saw the opportunity for greatly increased productivity."

Another consideration for distributed processing was the Wang equipment itself, which Hutton described as "a much more user-friendly development machine than the mainframe." With Wang, the port authority developed many specialized transportation packages in-house such as tracking cargo movement, warehousing functions and generating electronic forms for U.S. Customs shipments.

"We're a Wang shop, and we're pretty much locked in," said Cecil Patterson, Port of Seattle director of information systems, who noted that the authority's own business is distributed. "We anticipate pushing that [B4890] out the door by the end of 1989.

"The reason we went to minis is we were out of computing power," Patterson said. "We either had to replace the old mainframes or go distributed. We decided to go distributed."

Patterson noted that minis cost much less than a centralized processor. "We could buy minis as the need arose rather than spending millions for a mainframe."

Patterson *says the Port is committed to Wang*

Until four years ago, the agency operated two Burroughs — now Unisys Corp. — mainframes, the B4890 and an older, smaller Burroughs B3805, even as the port began buying the Wang minis in 1980, usually one or two per year.

At one time, the port had 30 mainframe applications. But now, the 125-plus applications predominantly run on Wang minis — two VS 7310s, two VS 300s, two VS 100s, a VS 85 and a VS 6E — with a Wang VS 5000 on the way.

Meanwhile, most port applications have been redesigned for new business applications and to take advantage of the Wang equipment. Hutton, a 13-year Port employee, said the Port now is "riding the old applications out until they're converted over the next few months."

Rather than depend on Wang for support, the Port trained its own technical support staff. The Port's applications are written internally in Cobol, except for a few accounting packages such as general ledger, accounts payable and fixed assets purchased from Computron, and a system for purchase orders from Struc-

Continued on page 27

Suit wearing thin around users' pockets

BY JAMES DALY
CW STAFF

ATLANTA — Digital Equipment Corp.'s recently filed patent-infringement suit against drive maker Systems Industries, Inc. (SI) has left an unpleasant taste in the mouths of many users, who fear it may be indicative of a game plan to clamp down on the often less expensive products of third-party vendors.

Interviews with attendees at the Dexpo South '89 and Decus shows earlier this month revealed that many feel that the ultimate loser in the legal imbroglio will be the customer.

"DEC parts usually cost more than the third-party vendors, and if they are successful in locking those vendors out, it's going to drive our costs up," said Bill Thomas, owner of Central Datacon, a communications equipment supplier based in Huntsville, Ala.

DEC officials, however, claimed the reasons they charged SI with infringement of four Standard Disk Interface (SDI) bus technology patents are much broader. According to a statement issued by the company, "The action taken by Digital demonstrates the company's long-standing policy and commitment to protect vigorously its innovations resulting from investments in research and development."

The suit is directed against SI's C-series drives — which are reverse-engineered models of DEC's SDI connection — and seeks an injunction against sales and an award for triple damages.

Some customers said they feel DEC's move is counterproductive. "It's a bad approach. DEC can afford to be more lenient with their patents if indeed we're going to encourage innovation in the industry," said Glenn Greenwald, an engineer at General Electric Co. in Atlanta.

SI spokesman Brian Edwards said DEC's action is like throwing a pebble in a pond to see how far the ripples go.

DEC may already be achieving its desired result. One Detroit-based user who wished to remain anonymous said DEC's actions against SI "strengthen our position to stick with DEC materials."

Several converging factors may have been the impetus to start DEC's legal mind wandering. The firm's financial results have been lackluster of late, while Edwards said that disk-drive prices have dropped 40% in the past year.

Still, actions against third-party vendors are not new to DEC. In 1980, DEC sued SI over alleged patent infringement violations against its Synchronous Backplane Interconnect (SBI). That suit was settled in 1987, when DEC issued licenses to SI specifications to manufacture disk and tape drives using the SBI technology. DEC settled a similar action against Emulex Corp. last year.

But because most third-party companies run out of cash long before the courts get around to a decision, no suit by DEC has ever been decided in court, thus leaving the legitimacy of DEC's claims up in the air.

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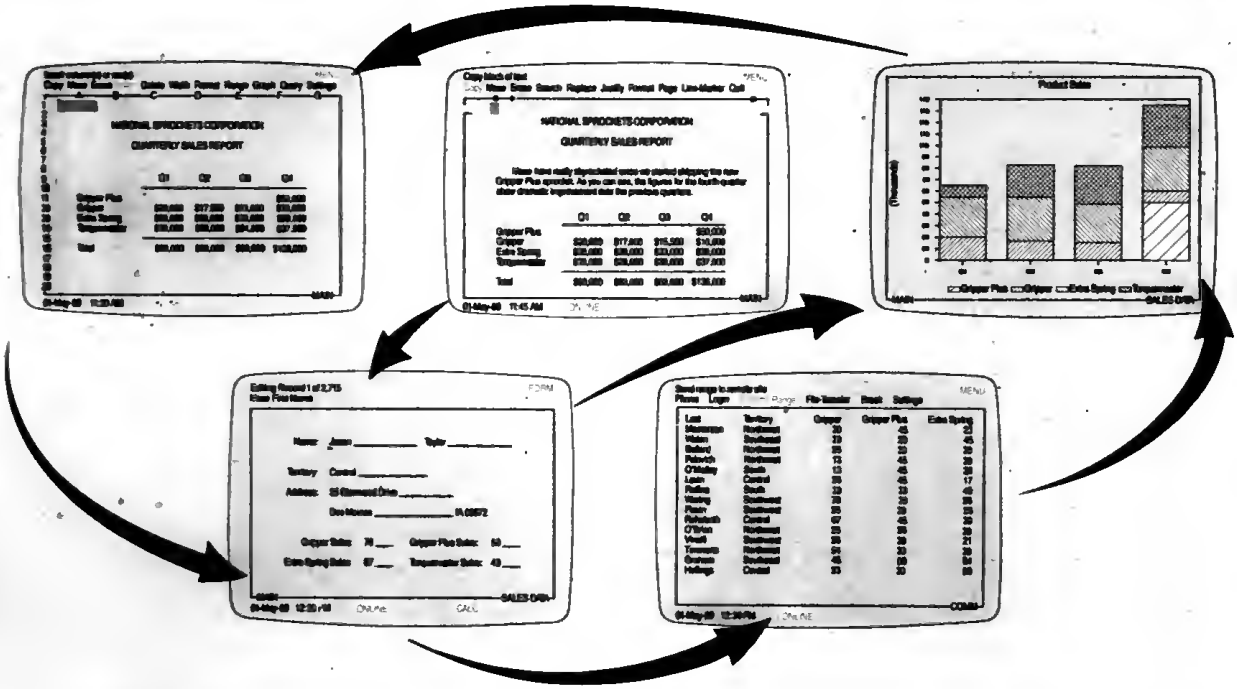

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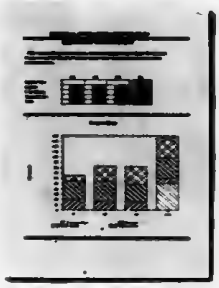

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IPL carves slice off card costs

BY ROSEMARY HAMILTON
CW STAFF

IPL Systems, Inc. slashed prices nearly in half last week on some of its memory upgrades for the IBM 4381 mainfames.

The price cut makes the new IPL memory cards more competitive with used IBM 4381 memory, according to William O'Neill, director of mainframe sales at IPL.

"In many cases, when customers have the choice, they will go with IBM used memory rather than with another manufacturer's new memory," O'Neill said.

Four 2M-byte cards, which had sold for $24,500, will now sell for $13,600. A 16M-byte upgrade, offered as four 4M-byte cards, will now sell for $25,600 instead of $44,500. The memory upgrades are used with 4381 mainframes in Groups 1 through 14.

According to O'Neill, users could pick up four 2M-byte cards for about $12,500 on the used market.

The IPL memory upgrades come with a lifetime warranty. In addition, they offer a faster write cycle than IBM's 4381 memory, O'Neill said. The IPL memory takes 11 cycles to perform a write instruction while the IBM memory takes approximately twice as long, O'Neill said.

The cuts are effective immediately.

Seattle

CONTINUED FROM PAGE 25

tured Computing Systems.

Although its Cobol programs from the batch-oriented Burroughs mainframe are not portable to the on-line environment of the Wangs, the port has continued to write applications for Wang in Cobol.

One application is a Wang-based system in which the Port sends data to U.S. Customs for steamship lines to expedite clearance of cargo.

Another is a warehousing application to tie the Port into other customer systems using electronic data interchange technology to handle bills of lading and order selection sheets from other locations electronically.

Besides shifting to minis, another big project is a budding venture between the Port of Seattle and the Port of Tacoma under which the two agencies will cooperate on an automated cargo-tracking system called the Puget Sound Community Cargo Release System.

"We haven't done much before with them because they're a competitor," Patterson said of Port of Tacoma. "But our thrust is to make it easier for everyone to do business no matter whose docks those goods come through. There are obvious pluses to that."

The Port of Seattle, which looked at similar systems in Rotterdam, The Netherlands and Felixstowe, England, also has checked out a project currently in place at the Port of New York-New Jersey. While the Puget Sound plan is already almost a year old, if eventually successful, the venture would link the competing agencies in a messaging network with the area's steamship lines, truck and rail carriers and transportation brokers.

Mips' memory prices fall

BY J. A. SAVAGE
CW STAFF

SUNNYVALE, Calif. — Mips Computer Systems, Inc. announced recently that it is reducing the cost of add-on memory by about 20% for its M/120 series and M/2000 series minicomputers, which run at 12 and 20 million instructions per second (MIPS), respectively.

Mips claims it is the first company to reduce prices as a result of the industry-wide decrease in dynamic random-access memory chip prices in the minicomputer and high-end workstation market. Hikes in DRAM prices had been blamed for increases in system prices over a year ago.

An 8M-byte add-on for the M/120 dropped from $7,350 to $6,000, and a 32M-byte add-on for the M/2000 went from $30,000 to $25,000, according to Frank Madren, director of systems marketing for the company, which is located here.

All of Mips' computers are based on the firm's proprietary reduced instruction set computing technology and run Unix.

Mips also unveiled two devices to allow ease of use for its systems in the commercial arena.

The firm announced availability of a low-cost small computer systems interface (SCSI) disk drive for the M/2000 series.

With the lower performance SCSI drive, the entry-level price for an M/2000 is $83,000 vs. a price of $100,000 for an M/2000 with a more scientific than commercial orientation and a higher data transfer rate storage module drive, according to Madren.

To facilitate commercial applications needing daily backups, Mips is offering a 2G-byte 8mm cartridge tape storage system for the M/120 and the M/2000.

The Model 6015 tape backup carries a list price of $6,500. A 120M-byte tape drive for the M/2000 minicomputer is already available.

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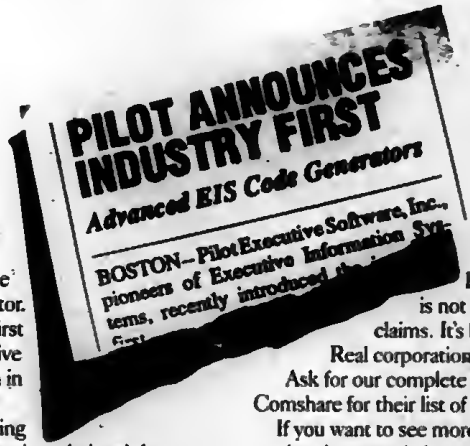

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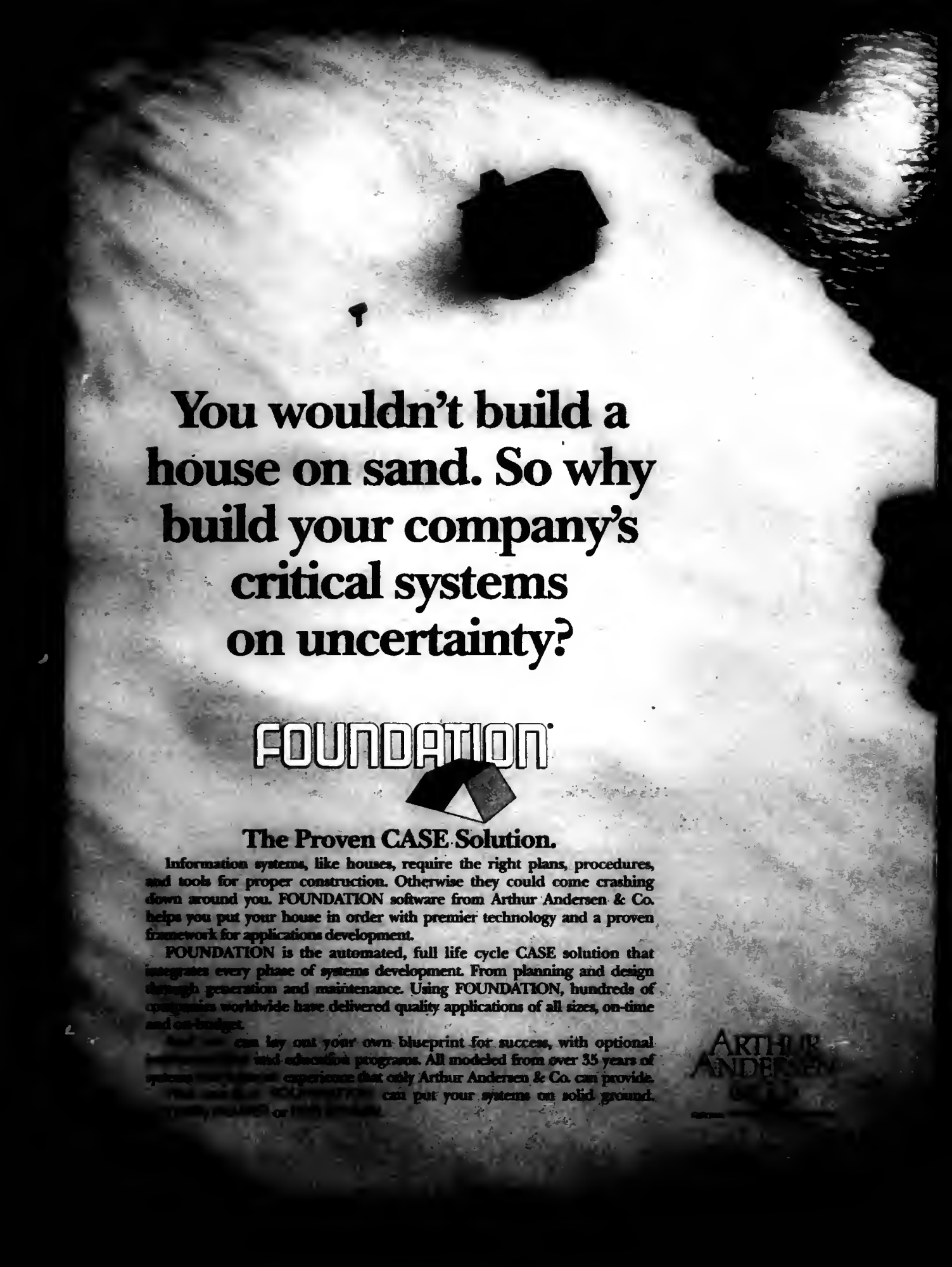
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SOFT NOTES

Index gets object capacity

Index Technology Corp. recently signed a licensing agreement with **Ontologic, Inc.** in Billerica, Mass., under which Index will gain access to Ontologic's object-oriented database technology for use in future products.

Richard Carpenter, president and chief executive officer of Index, a maker of computer-aided software engineering (CASE) products, said Ontologic's object-oriented technology will be "s natural fit" with Index's CASE tools.

Systems Center, Inc. in Reston, Va., said its VM Tape product now supports the Storage Technology 4400 Automated Cartridge System (ACS). The 4400 ACS is an automated cartridge-based library system.

VM Tape provides volume selection, tracking and management and automatic drive allocation. The 4400 ACS performs the tape mount and dismount functions normally performed by the data center operator.

Unisys Corp. said it signed a marketing agreement with **Cargolux Airlines International SA** in Luxembourg for the rights to the Champ cargo revenue accounting system. The Unisys version of Champ is called the Usas Cargo Revenue Accounting system. Usas is a suite of software designed to handle accounts receivable, accounts payable, proration, provisioning and revenue reporting of cargo accounting. Unisys also announced with **EDI, Inc.** in Gaithersburg, Md., that EDI's Telink software will be migrated to run under the Unix operating system.

IBM pops conversion aid cork

BY JEAN S. BOZMAN
CW STAFF

IBM recently announced a conversion aid for users of Computer Associates International, Inc.'s ACF II mainframe security system.

"It's designed to help customers through a complicated migration," an IBM spokesman said. "It's a set of programs that are used to convert the bulk of the ACF II database into an RACF database automatically."

IBM is also providing a program that will allow ACF III and IBM's own RACF systems to coexist while customers convert files to the new RACF system. Although IBM declined to give the price of the conversion package, it includes three weeks of consulting from IBM engineers.

Michael Braude at Gartner Group, Inc. said he believes the move was a response to customer demand for a conversion tool. "I suspect some users asked them for help in converting from ACF II to RACF, and they decided to make the programs generally available," Braude said.

CA and IBM have about 80% of the IBM mainframe sites that run MVS security systems, Braude estimated. He said IBM has about 4,500 sites worldwide to CA's 3,000, including those that run CA's other security product, Top Secret. Computer Associates and IBM have the capability to fight for market share, Braude said, but they may choose not to.

Ronn Bailey, president of Vanguard Integrity Professionals, Inc. in Orange, Calif., said the product is not meant to crowd Computer Associates and other security-software vendors out of the market. "Security software from Computer Associates, like ACF II and Top Secret, will be able to coexist with RACF, as long as the vendors use the standard interface IBM provides," he said.

IBM release

CONTINUED FROM PAGE 23

3 Version 1 is that it is broken into two parts — IMS/ESA Database manager and IMS/ESA Transaction Manager. Although previous releases of IMS have been in two parts, both were required to work together. In Release 3 Version 1, however, the IMS/ESA Database Manager can work with several different transaction managers.

Similarly, the IMS/ESA Transaction Manager, which IBM said is compliant with Systems Application Architecture (SAA), works with other database management systems, including IBM's DB2.

George Coleman, an independent consultant in Chicago and formerly at Amdahl Corp., criticized the release because it requires the ESA architecture without any compelling reason. "The virtual storage constraint relief is the only thing that users want among the features added, but that could have been added without tying the new version to ESA. They could have added it to the XA version," Coleman said.

Michael P. McLoughlin, manager of the IMS technical office at IBM's Santa Teresa Laboratory in San Jose, Calif., conceded that IBM could have added virtual storage constraint relief under MVS/XA but asserted that the other features in the release are desired by customers and are worth the price.

One enhancement in the release is Fastpath high-speed sequential processing, which uses the Fast Write capability of IBM 3990 Model 3 controllers. The enhancement can save time in logging and copying for backup. McLoughlin said he cannot yet say how much time the function saves because performance is still being measured in early support accounts.

Atre said the enhanced Fast Path will encourage IMS users with high-transaction volumes to migrate to it rather than use IBM's transaction processing facility, which typically requires large numbers of support personnel. "IBM is saying if you are going to stay with IMS, then move to IMS/ESA with Fast Path," Atre said.

Despite IBM's recently proclamation that IMS will carry on for many years, Atre said the release's low-key announcement was intended not to draw attention from DB2, IBM's fully SAA-compliant relational DBMS. "IBM is not making a big deal out of IMS announcements because DB2 is strategic," Atre said.

Gibson

CONTINUED FROM PAGE 23

ences, it was replete with noble platitudes from consultants and business school professors. We heard Ed Yourdon, publisher of *American Publisher Magazine*, tell those in attendance that most users were not ready for CASE. We heard other speakers say that if those same users did not move to CASE, their competition will leave them in the dust.

CASE has been likened to sex before, and the analogy is probably good for another round. If CASE is like sex, then hearing moralists offer cautions and advice is only worth so much. Yes, the cliches about a long-term relationship and waiting until you are ready are valuable. But users crave experience from which their real lessons will be learned. They yearn to hear those "true-life stories."

What will probably happen for most users is they will lurch clumsily into CASE and get their act together only after some unpleasant experiences.

However, what is needed to get them to that point is a catalytic event. Such an event could be the appearance of the IBM repository. If it lives up to its billing, the repository should clear away several obstacles in the path of CASE. Most obvious, it is expected to provide a sorely needed standard backplane into which CASE tools can "snap in and snap out," as IBM puts it.

Most users will tell you that they do not feel comfortable committing to the encyclopedia or repository of a relatively small vendor.

Their point of view is understandable. The world's largest CASE vendors express their annual sales in the tens of millions of dollars. The companies that are in most urgent need of CASE have sales in the billions. Those giants do not feel comfortable with all of their data leaning so heavily on one of these tiny software pillars.

Now if that pillar were IBM and its standard repository, that would be different. There is no question that one of IBM's major reasons for existence is that it knows how to make people feel comfortable. Over the years, whatever else IBM has done, it has done that.

> IF IT lives up to its billing, IBM's repository should clear away several obstacles in the path of CASE.

A $10 million vendor claiming IBM compliance and boasting a recommendation from IBM will be far more successful than that same company today without IBM's blessing.

Beyond satisfying the crying need for a standard backplane for CASE, the repository cannot be expected to solve all problems. What it will probably do is launch users on the path to discovery, with all the blessings and curses that go with that. It will get them on their way to where they have already decided they must go.

Gibson is *Computerworld's* senior editor, software.

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NEW AT DEXPO SOUTH '89

The following products were announced at Dexpo South '89:

• **System Industries** in Milpitas, Calif., expanded its C series family of Digital Equipment Corp. distributed systems architecture-compatible disk drives with the introduction of an 8-in. 863M-byte drive.

The SI92C provides 10.3G bytes of formatted capacity per subsystem and connects directly to DEC VAX computers or VAX cluster configurations, according to the vendor. The products offer a 16 msec average access seek time and a reported transfer rate of 2.75M byte/sec.; it is scheduled for delivery in June.

A full 12-drive 10.5G-byte subsystem is priced at $185,000.

• A file and directory management software program for VAX/VMS users was introduced by **Hancock Software, Inc.** in Watertown, Mass.

According to the company, Filemaster was designed to simplify routine file management tasks. The program simultaneously places all relevant data, including directory structure, file names, contents and attributes, on a DEC-supported terminal screen in a multiwindow display format. Additional features reportedly include point-and-shoot menus, file selection and sorting commands.

Pricing ranges from $495 to $7,950, depending on CPU size.

• **Distributed Logic Corp.** unveiled its power-disk series Winchester storage subsystems, designed to provide DEC users with up to 673M bytes of formatted capacity per drive in a 5¼-in. enhanced small disk interface configuration.

The units reportedly offer a 2.4M byte/sec. data transfer rate and a 16 msec average seek time and are said to be available in tabletop, multidrive rack mount, tower enclosure and add-in skid-plate versions.

Pricing ranges from $7,400 to $28,690, depending on configuration. The company is headquartered in Anaheim, Calif.

• **Recital Corp.** released Version 5.5C of Recital, the company's relational database management system and fourth-generation language product.

The Danvers, Mass.-based vendor said that more than 43 functions have been added to the software, including support for text search in memo fields, pull-down menus on DEC VT terminals and support for nested reads and data manipulation. The software is reported to be compatible with Ashton-Tate Corp.'s Dbase III Plus, Nantucket Corp.'s Clipper and Fox Software, Inc.'s Foxbase Plus personal computer-based packages. Recital runs on VAX/VMS and AT&T Unix-based systems.

Pricing ranges from $4,500 to $45,000.

• **Control Data Corp.** introduced an environmental modeling component for its Proact Program of Service Enhancements for VAX/VMS system managers, according to the vendor.

Proact 3000, the latest addition to the Proact Program, reportedly provides software and sensors that monitor environmental conditions within a computer room, including temperature, humidity, floor water and smoke.

Pricing begins at $100 per site per month and excludes sensor hardware, which must be purchased separately.

The Minneapolis-based company also announced several software enhancements for its Proact 1000- and 2000-level services, such as disk utilization and process and security monitoring capabilities, the vendor said.

Prices range from 5% to 15% of monthly hardware maintenance costs, according to the vendor.

• **Emulex Corp.** in Costa Mesa, Calif., announced the QD35-III SMD-E disk controller with 1M byte of cache memory, developed specifically for DEC Microvax 3500, 3600, 3800 and 3900 computers.

The controller reportedly provides rotation position sensing and zero latency read in addition to cache memory and is especially suited for imaging and graphics applications, the company said.

Pricing begins at $2,995, and initial customer shipments are scheduled for June.

• **Data Retrieval Corp.** introduced its Textbook Online Manuals software, a VAX/VMS application that reportedly uses a free-form, full-text database to manage large amounts of reference information and images online.

The program was designed to allow users to store, update, search and retrieve information normally found in book or paper format, the company said. This includes safety procedure manuals, plant maintenance documentation, pricing catalogs and engineering diagrams. The software also runs on IBM MVS/CICS systems.

Pricing begins at $9,300 for nongraphics applications; applications with graphics capabilities are priced from $14,925. The company is headquartered in Milwaukee.

• **Clearpoint Research Corp.** in Hopkinton, Mass., announced a series of disk controllers and disk storage subsystems for the VAX 6000 and 8000 series.

The DSB disk controller resides directly on the VAXBI I/O bus and incorporates a Motorola, Inc. 68020 microprocessor and 64K bytes of buffering, the company said. The product reportedly offers a peak transfer rate of 4M byte/sec., allows up to seven disk devices and occupies only one slot.

The subsystem is available in several versions, ranging from standard 19-in. rack-mountable units to fully configured cabinets, the vendor said.

Pricing begins at $22,500 for a single-unit, one-controller, one-drive configuration to $114,500 for the maximum one-controller, seven-drive version.

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OS/2 NEWS

Volume 1, No. 3.

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NEW PRODUCTS — SYSTEMS

Data storage

U.S. Design Corp. has expanded its Q-Stor family of storage systems with the announcement of the 650M-byte erasable optical-drive series for Digital Equipment Corp. and Sun Microsystems, Inc. platforms.

The product line reportedly consists of the following: the QT650 single-drive, tabletop enclosure with a power supply; the QD650 two-drive enclosure with power supply; and the QS650, a four-drive rack mount or pedestal unit with a power supply. They are priced at $8,230, $8,723 and $17,000, respectively. All units include a 650M-byte erasable drive.

U.S. Design
4311 Forbes Blvd.
Lanham, Md. 20706
301-577-2880

Clearpoint Research Corp. has announced a single-slot, 32M-byte memory upgrade.

The DCME-M30/32MB is compatible with the Digital Equipment Corp. Vaxstation 3200 platform and incorporates a proprietary gate array for reducing the number of components on the board, the vendor said. The product reportedly allows Vaxstation 3200 users to address the maximum 64M bytes offered by the system. The DCME-M30/32MB is priced at $11,500, and quantity discounts are available.

Clearpoint Research
99 South St.
Hopkinton, Mass. 01748
508-435-2000

I/O devices

Interface Systems, Inc. has announced a desktop dot matrix printer developed specifically for use with IBM's midrange computer systems.

The ISI 7224-101 operates with the IBM Application System/400, System/36 and 38 and offers draft output at 200 char./sec. The unit incorporates a 9-wire printhead and was reportedly designed as a plug-compatible replacement for IBM's 4224-101 and 4224-301 printers. The product is priced from $3,525, and volume discounts are available.

Interface Systems
5855 Interface Drive
Ann Arbor, Mich. 48103
313-769-5900

A color video copy processor that reportedly produces 6- by 8-in. prints in variations of more than 260,000 colors has been announced by Mitsubishi Electric Sales America, Inc.

The Model CP-200U uses a sublimation dye thermal system and offers a 1,280-dot horizontal resolution, according to the company.

The unit includes a wired remote control with LCD display and is priced at $7,500, according to the vendor.

Mitsubishi Electric
800 Cottontail Lane
Somerset, N.J. 08873
201-563-9889

Iris Graphics, Inc. has announced that its Model 3024 continuous-flow color ink-jet printer will be available on Sun Microsystems, Inc. Sun-3 and Sparcstation families of workstations.

According to Iris Graphics, the Sun-Iris interface will allow customers to print near-photographic-quality color images in format sizes as large as 24 by 24 in.

The 3024 printer is priced at $75,000.

Iris Graphics
6 Crosby Drive
Bedford, Mass. 01730
617-275-8777

NEW PRODUCTS — SOFTWARE

System software

Sansoft, Inc. has introduced the KSA System, which was designed to provide a Wang Laboratories, Inc. VS-like operating environment for NCR Tower computer users.

The main shell is very similar to the Wang VS Help processor and includes a procedure interpreter source code comparable to the Wang VS Procedure Language. The product incorporates a C-screen source-code generator utility that allows freehand design of screens. It costs from $795 to $1,800. The Santa Cruz Operation Xenix versions for Intel Corp. 80286- and 80386-based machines cost $695 and $895, respectively.

Sansoft
P.O. Box 7000-207
Redondo Beach, Calif.
90277
213-373-7600

Computer Associates International, Inc. has announced Version 5.0 of CA-Mazdamon, its network performance monitoring system for the IBM MVS operating environment.

The latest release reportedly provides on-line Network Control Program (NCP) statistics that allow the user to observe detailed information regarding NCP performance in both real-time and historical reports. Pricing ranges from $26,900 to $49,300, depending on system size, configuration and options selected, the vendor said.

CA
711 Stewart Ave.
Garden City, N.Y. 11530
516-227-3300

Development tools

Interleaf, Inc. unveiled a program developed specifically to help contractors meet the Department of Defense Computer-Aided Acquisition and Logical Support (CALS) standards.

The CALS Preparedness Package gives users the tools they need to create CALS-compliant documents, according to the vendor. These reportedly include Standard Generalized Markup Language for text, Initial-Graphics Exchange Specification for engineering drawings and CCITT Group 4 for raster images. The CALS software is said to be completely integrated

Continued on page 37

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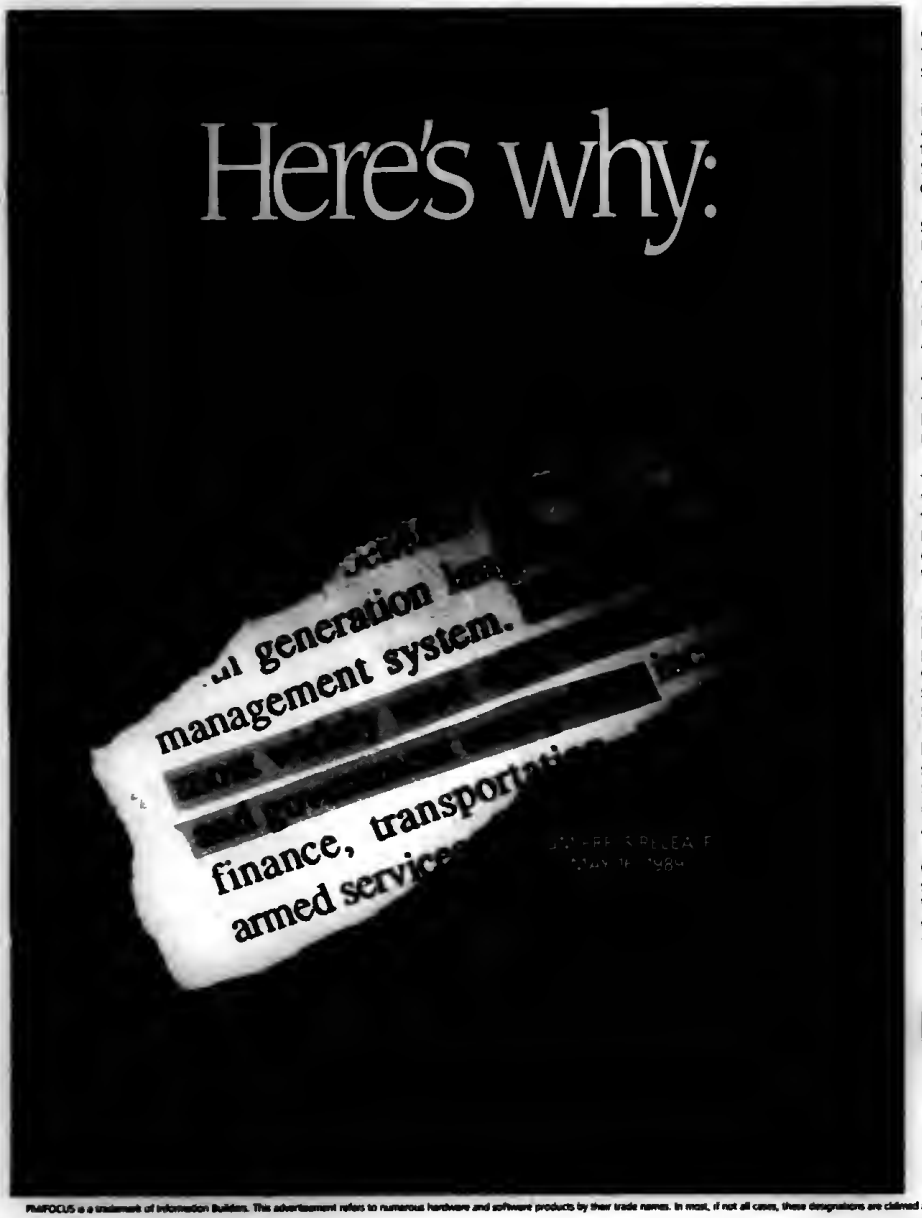

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Continued from page 35

with Interleaf's publishing package and is slated for delivery in June. The program runs on Apollo Computer, Inc., Digital Equipment Corp. and Sun Microsystems, Inc. platforms and is priced at $60,000 including training and support.

Interleaf
10 Canal Park
Cambridge, Mass. 02141
617-577-9800

Tominy, Inc. has ported its Mach 1 Application Development Environment to AT&T's Unix System V, Version 3.2 for the AT&T 3B2 and 6836 computing platforms, according to the company.

The software was reportedly designed to provide users and developers with a consistent interface to Unix. The product permits integration of multivendor software development and production environments, the vendor said.

A runtime license is priced from $1,000 to $5,000, and a development license is priced from $1,750 to $30,000. Cost is determined by machine type and number of users.

Tominy
4221 Malsbury Road
Cincinnati, Ohio 45242
513-984-6605

BSO, Inc. has enhanced the performance of its Simulator Debugger products, according to the company.

Designed for use by software engineers, the products run in a multiuser environment to simulate memory and I/O as well as interrupts on the I/O, the vendor said.

The software runs on Digital Equipment Corp. VAX computers and is priced at $1,750.

BSO
128 Technology Center
Waltham, Mass. 02254
617-894-7800

Star Technologies, Inc. has introduced Topgen, database modeling software designed to create databases for the company's Graphicon 1700 Simulator image generator system.

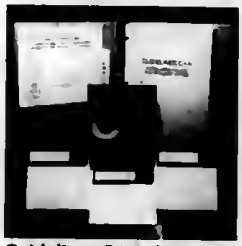
Topgen reportedly allows the user to create, edit and view three-dimensional image generator databases used in real-time visual simulation applications. Applications reportedly include flight simulation, military driver training and ship pilot training. The package is priced at $39,000 and is scheduled to ship in July.

Star Technologies
515 Shaw Road
Sterling, Va. 22170
703-689-4400

Guidelines Software, Inc. has released Guidelines C++ for object-oriented programming environments based on AT&T Unix System V and the Intel Corp. 80386 chip.

The product is a superset of the C language and is ANSI C compatible. Functions reportedly include classes, inheritance, constructors and destructors, data hiding and data abstraction. The software is priced at $495.

Guidelines Software
P.O. Box 749
Orinda, Calif. 94563
415-254-9183



Guidelines C++ *is a superset of the C language*

Ergodic Systems, Inc. has announced Version 2 of MDS32, the company's menu-design software tool for Digital Equipment Corp. VAX/VMS systems.

Enhancements reportedly include character- and field-level validation and extended definable function key support. A runtime option that allows developers to simplify custom application installation is available, the vendor said.

Primary license prices range from $245 for Vaxstations to $2,245 for VAX 8800 series machines.

Ergodic Systems
23666-A Birtcher
El Toro, Calif. 92630
714-380-9719

Applications packages

Applix, Inc. has announced that its Alis office automation software will now run on Solbourne Series 4 Unix-based workstations from Solbourne Computer, Inc.

The software package also operates in a Sun Microsystems, Inc. Series 4 workstation environment, according to the company.

Alis reportedly enables users to create compound documents that combine text, graphics and database elements. Editing features are also provided.

The product is priced at $2,495 and will be available for the Solbourne workstation platform in the second quarter, the vendor said.

Applix
112 Turnpike Road
Westboro, Mass. 01581
617-870-0300

Statware, Inc. has ported Statit, its Unix-based statistical and graphics analysis package, to a variety of computer platforms.

According to the vendor, the program is now available to run in several hardware environments, including those from Digital Equipment Corp, NCR Corp., Unisys Corp., Harris Corp. and Sun Microsystems, Inc.

The product reportedly includes a statistical quality-control module, a statistics module and a procedure-writing module and is priced from $750.

Statware has also announced the Statit Oracle Interface Module for all Statit 2.0 platforms. The software package is said to provide access to Oracle Corp.'s Oracle database files and includes data display, insertion and update capabilities.

Pricing for the Statit Oracle Interface Module begins at $250.

Statware
Suite 109
260 S.W. Madison Ave.
Corvallis, Ore. 97333
503-753-5382

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The WY-150 also sets new ergonomic standards. Its 78 Hz refresh rate eliminates any hint of flicker. Just as overscanning and a bezel that matches the soft, paper white phosphor erase distracting borders. (Amber and green phosphors are also available.) The oversize 10x16 cell makes each crisp character stand out vividly.

The WY-150 is also part of *SystemWyse*. It links effortlessly with Wyse PCs and multi-user platforms to create uniquely integrated and cost-effective solutions. Everything is designed, manufactured, and tested by Wyse to work together. And it's all backed by the service and support of the world's leading independent terminal maker.*

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MICRO BITS

Douglas Barney

Let's hear inside scoop

Messy, messy, messy. The hottest and most disturbing trend in personal computer software is for companies to sue each other for stealing ideas. In the case of Dbase-compiler player Nantucket Corp., those kinds of suits just don't cut it.

Instead, the only two Nantucket shareholders, current Chief Executive Officer Barry G. ReBell and former President George A. Juarez, are suing each other for millions upon millions.

Like any good lawsuit, the two parties have been slinging nasty words at each other in court documents — words such as oppression, fraud, malice and recklessly disregarding falsity. Wonder what these two say about each other in private?

The suit is of keen interest to customers because it stabs at the very center of Nantucket as a business. Many shops have shunned the sluggish Dbase and opted for the speedier Clipper. By pioneering such features as user-defined functions, Clipper is a Dbase programmer's dream.

But all is not well at this firm.

Continued on page 47

Unix users cool to DOS options

Coprocessors, software emulators still carry disadvantages, limitations

ANALYSIS

BY PATRICK WAURZYNIAK
CW STAFF

Although users of Unix-based technical workstations have more choices than ever with which to run their favorite MS-DOS applications, such as Lotus Development Corp.'s 1-2-3, DOS coprocessors and software emulators have yet to gain a firm hold in the Unix marketplace.

Many observers are bullish on emulators, but some critics see limited potential for emulation programs that mimic the Intel Corp. 8086 instruction set and the Intel hardware coprocessor boards, which are viewed as a stopgap measure.

Products such as these intended to help engineers run DOS-based office-type applications on Unix workstations are available either through Intel microprocessor-equipped add-on boards or software coprocessors such as those from Mountain View, Calif.-based Insignia Solutions, Inc. and Phoenix Technologies in Norwood, Mass.

Engineers ask for DOS applications such as 1-2-3 or Microsoft Word because they "don't want to give up their favorites," said Dan Ness Jr., senior analyst at Santa Clara, Calif.-based market research firm Infocorp.

Steadily increasing CPU speeds of today's market leaders are easing the problem of processor overhead, which has led to complaints of slower performance when an application is moved from a PC to a Unix workstation.

Quick action

"It's now clear that CPUs that are hosting Unix are getting faster at an increasing rate," said Phoenix Technologies' Vice-President of Marketing Rich Levandov. He noted that today's 12- to 15-million instructions per second (MIPS) workstations will soon be augmented by 25-MIPS machines from market leaders.

Does a user of a Sun Microsystems, Inc. or Mips Computer Systems, Inc. workstation care about having a DOS-compatible window, Levandov asked. "We've found they care a lot," he said. For a little extra money, they can run all of the DOS applications on their workstations."

Jorge Rodriguez, a consultant at the New York-based investment banking firm Mabon, Nugent & Co., said he tried DOS applications on the brokerage firm's Unix-based Sun 386I workstations with Phoenix's VP/IX emulation software but found few advantages to overcome the limited disk space.

"We had tried it," Rodriguez said. "I still don't see the advantage, even at home where I have two PCs. Why should I have a word processor and Unix?"

A Sun user at Deere & Co. in Moline, Ill., found emulation programs to be slow. "To be perfectly honest, we haven't been

Continued on page 46

TV station saves time, money with PC network

ON SITE

BY MICHAEL ALEXANDER
CW STAFF

BOSTON — As the commercial television industry celebrates the 50th anniversary of the start of regularly scheduled broadcasts, many television stations are scrambling for their survival.

With increasing numbers of viewers tuning into cable and satellite television and home videocassette recorders, commercial television stations are under pressure to cut costs and boost their program offerings.

WNEV-TV, the CBS affiliate in Boston, has invested heavily in information systems technology to manage more efficiently in what it predicts will be an extremely competitive market. The station, which claims to be one of the most highly automated in the nation, has 60 Wells American personal computers on a Novell, Inc. network with five file servers and 65 nodes as well as an assortment of stand-alone PCs and laptop computers.

WNEV-TV also uses more than 80 different computer programs on the network and stand-alone PCs, including software that runs videotape editing equipment and robot cameras that handle routine camera sequences during newscasts.

"We decided on a network instead of a minicomputer because it was more cost-effective," said WNEV systems administrator Steve Curcuru. "But there is also a richness of applications for personal computers. I can't believe how many applications there are out there that are easy to use and functional, especially for creative work. Have you ever heard of being able to edit videotape on a mini, for example?"

Many programs have to be modified or developed in-house with Borland International's Turbo Basic and Turbo Pascal, he said: "Most of the companies that we bought stuff from said we could not run it on a network, but we found a couple of guys that have helped us get what we needed. It hasn't been flawless, but it is still wonderful."

End users on the network use Ashton-Tate Corp.'s Framework III extensively for account-

Continued on page 46

Inside

- Bus mastering products are lauded. Page 43.
- A Rainbow's end to security. Page 43.
- Laserdata rolls out two more scanners. Page 48.

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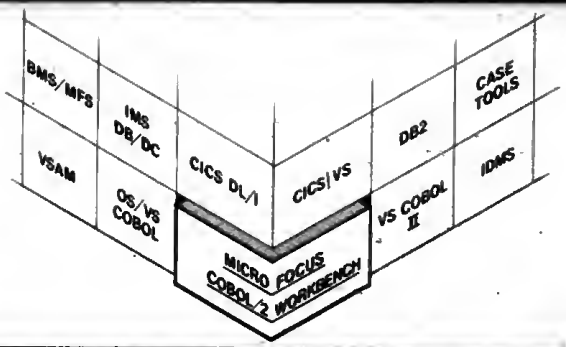

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SMALL TALK

William Brandel

IBM's game: Wait for the leader

"Because our customers look to us for leadership," is the answer IBM executives often give when asked to defend the company's forward-thinking technologies. For the most part, the answer is true — customers do look to IBM for direction in computing.

But lately at IBM's low end, the catchphrase is, "Our customers didn't want it yet." The bottom line for IBM customers: wait and follow. The question is whether IBM is the leader.

Such is the case with SAA Officevision, a cooperative processing office application package that will allow mainframes and personal computers to work interactively. Users again will wait until it is rolled out next year.

IBM forces one to question its commitment to its low-end customers. Recently, William McCracken at IBM said that "Priority 1 for us is dealer profitability." Perhaps someone ought to tell McCracken that customers are the ones who have bought into IBM's products to make themselves more competitive, not to be part of a grand strategy. It's a nice to know where one sits on IBM's totem pole. As the company increasingly treats its customers like the part that goes in the ground, the position of low-end users becomes more clear.

At Comdex/Spring '89, IBM Entry Systems Division President James Cannavino hinted at hidden capabilities in the Micro Channel, calling it an architecture of the future. Whatever happened to, "If we haven't got it, we don't announce it?" IBM is turning its PC strategy into one of the world's longest running soliloquies. Customers' business needs are today, now, yesterday even. Well, you'll just have to wait.

IBM, the "leader," has lately expressed only doubt over the acceptance of OS/2, offering rebates on OS/2-related hardware and applications. That is not exactly a halftime pep talk. Two weeks ago at an IBM announcement, not one representative from IBM or Microsoft could think of a single MIS site that has standardized on OS/2.

Continued on page 47

Bus master arrival welcomed

As technology trickles into use, users report enhanced performance

BY WILLIAM BRANDEL
CW STAFF

Much like a needle in a haystack, users employing bus mastering technology on personal computers are difficult to find. But initial performance results from the rare users of a bus mastering disk controller hint that the long-awaited products are worth the wait.

One of the first bus masters to make it into users' hands is the Micro Channel Architecture (MCA)-based product from Core International, based in Boca Raton, Fla. The bus master product is a 15-MHz intelligent enhanced storage device interface (ESDI) Winchester disk drive controller compatible with Micro Channel systems.

Bus mastering technology is one of the primary exploitations of IBM's Micro Channel Personal System/2 machines, as it allows processors other than the CPU to take control of the bus.

The technology, which IBM has been touting since the introduction of MCA in April 1987, is expected to incite an innovative approach to personal computing, since it will support intelligent storage subsystems such as the Core International disk controller.

Other bus master applications will reportedly include separate communications device processors as well as processors that sort databases and manipulate high-power graphical images.

Few deliveries

IBM has stated that it will use bus master technology in order to upgrade its PS/2 users to higher speed processors such as the Intel Corp. I860 reduced instruction set computing processor on a bus master add-in card.

But much to IBM's embarrassment, very few bus masters have reached users' hands, despite apparently strong demand for the products. Many users who bought into the Micro Channel have said they did so specifically to implement bus mastering applications.

"There is definitely a noticeable improvement with the bus master," said Bob Reigle, networking specialist at Prudential Capital Management Corp. in Newark, N.J., a subsidiary of Prudential Insurance Corp.

Reigle said Prudential is trying to measure the performance of its business development team, which is responsible for "creative financing."

The team's latest achievement is delivering Compaq Computer Corp. a loan to build a manufacturing plant in Houston.

Driving fast

To build this performance measurement database, Reigle is using the Core International CNT-MCA bus master controller in a local-area network server based on a 20-MHz IBM PS/2 Model 80. The customized server database supports 300 users within the Prudential facility.

"At any given time, you have 25 to 50 people simultaneously pulling information off the database," Reigle said. "And you need one fast drive to support that. This controller surpassed anything we've ever even seen before."

Reigle said his only snag in using the Core product was during installation, as it turned out to be difficult to get the PC LAN operating system to keep up with the disk controller.

Aside from that, Reigle is enthusiastic about the new bus master product and plans to install it in other LAN servers to support 15 other Prudential regional offices.

The Core Technology bus master controller can be installed with up to four ESDI hard disk drives. It supports dual-sector buffering, has an on-board direct-memory access control and can coexist with the standard IBM controller.

The Core product operates in 256K- and 512K-byte sectors and can support drives with more than 1,024 cylinders. It has a 15-MHz data transfer rate and a 15-msec data seek time, the company said.

Aetna Life and Casualty Co. is hoping the Core International bus master controller will boost its PC LAN user response time by a factor of three, according to Dennis Kearns, Aetna LAN manager.

Kearns has ordered but not yet received his bus master and said he plans to install the Core controller in his PS/2 Model 80.

He said his 55 PC LAN users now face a seven-second response time, and he wants to cut it to two seconds.

Kearns said he will also augment the controller with a Token-Ring bus master to further increase LAN speed as well.

All bus-iness

Bus masters are an integral enhancement to IBM's Micro Channel Architecture. Products soon to be available will offload processing from the CPU for the following applications:

- Scientific applications using the Intel I860 processor to boost computing power
- Intelligent control of token-ring networks
- Ethernet network power and control
- Intelligent control of enhanced small device interfaces
- Facsimile transmission for image-processing applications

Microsoft hits low end with Pascal compiler

BY PATRICK WAURZYNIAK
CW STAFF

REDMOND, Wash. — Microsoft Corp. last week began shipping Quickpascal Compiler, a low-cost version of its professional Pascal language compiler that uses object-oriented programming and is said to be compatible with the market-leading $150 Turbo Pascal 5.0 now offered by competitor Borland International.

Quickpascal follows Microsoft's earlier releases of its high-end Pascal Compiler Version 4.0, a $395 product intended for developers writing applications for MS-DOS or OS/2.

Microsoft's Quickpascal program offers an integrated debugger in the base product, which reportedly has a seamless development environment with a windows-based editor supporting multiple views into a source file, or simultaneous editing of multiple files, Microsoft said.

The program's documentation includes Quickpascal Advisor, hypertext-based documentation that comes with Microsoft's languages and Quickpascal Express, an on-line, computer-based tutorial.

Microsoft Quick languages product manager Greg Lobdell said that although Quickpascal was a joint project between Microsoft and Paris-based Natsystemes, it was developed at Microsoft's headquarters here.

Trend of the future

Quickpascal itself was written in the Quickpascal language using the object capability of the programming language, which has extensions to Object Pascal, an Apple Computer, Inc. version of the language.

Lobdell said object-oriented programming (OOP) would be the major programming development of the next decade.

"Virtually everybody in the industry is saying OOP is to the 1990s what structured programming was to the 1970s," Lobdell said. "Quickpascal is the first step in a long staircase toward the nirvana of having a computer on every desktop and in every home."

The program, which requires 512K bytes of memory, two double-sided disk drives and MS-DOS Version 2.1 or higher, will retail for $99.

Rainbow patrol

BY MICHAEL ALEXANDER
CW STAFF

Protecting sensitive data on desktop and laptop personal computers can challenge even the most diligent end users. But Rainbow Technologies, Inc., an Anaheim, Calif.-based vendor of hardware keys for software and data protection on IBM and Apple Computer, Inc. Macintosh personal computers, said in a recent announcement that its new Data Sentry II security system will protect PC files from unauthorized access.

The combination hardware and software system for IBM and compatible PCs and laptop computers consists of a personal access key and software that generates a proprietary algorithm to encrypt data files on PCs and secure data for modem transmissions.

To successfully log on to a secured system, a user must have an identification code, password and personal access key that plugs into the parallel printer port on the PC. The key can be removed for safekeeping or can be disabled in the event that it is lost. The system can also work in a multilevel mode to enable a department manager to access a staff member's files.

Rainbow Technologies suggests a retail price of $195 for the product, including a personal access key, software and cable to facilitate connecting the key to the PC's parallel port.

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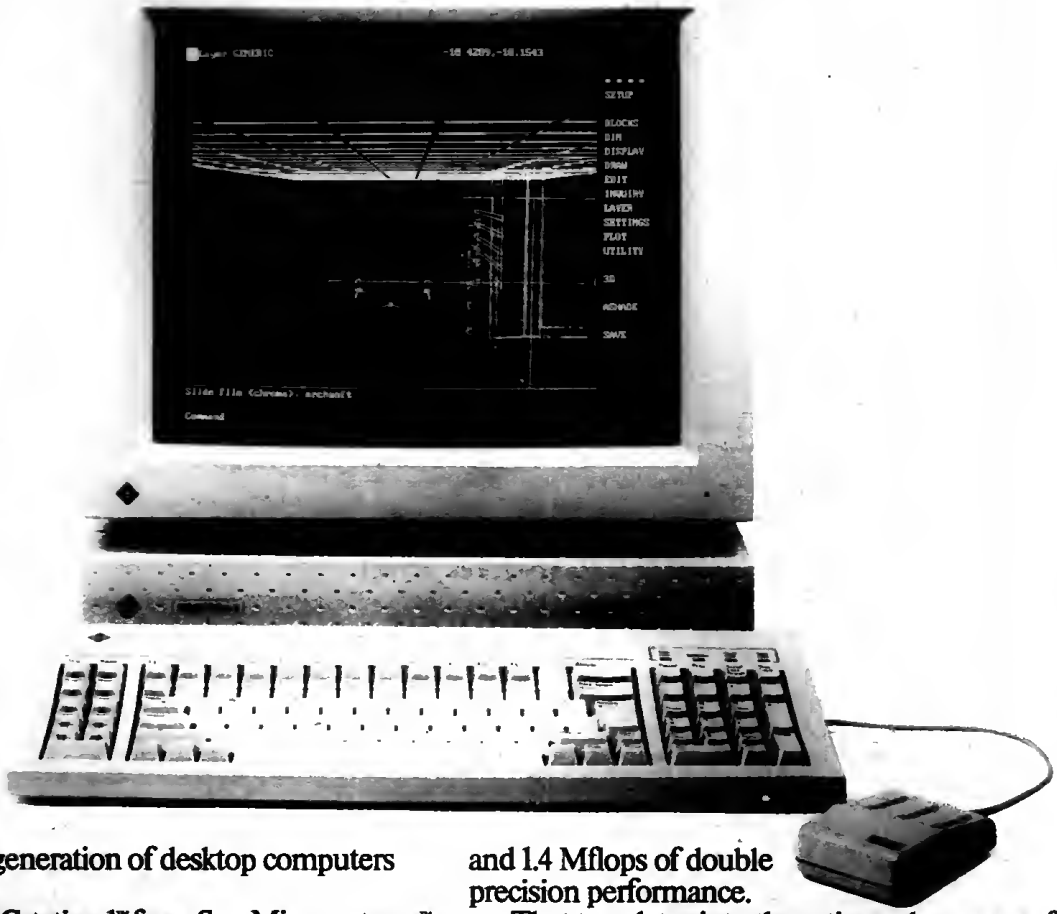

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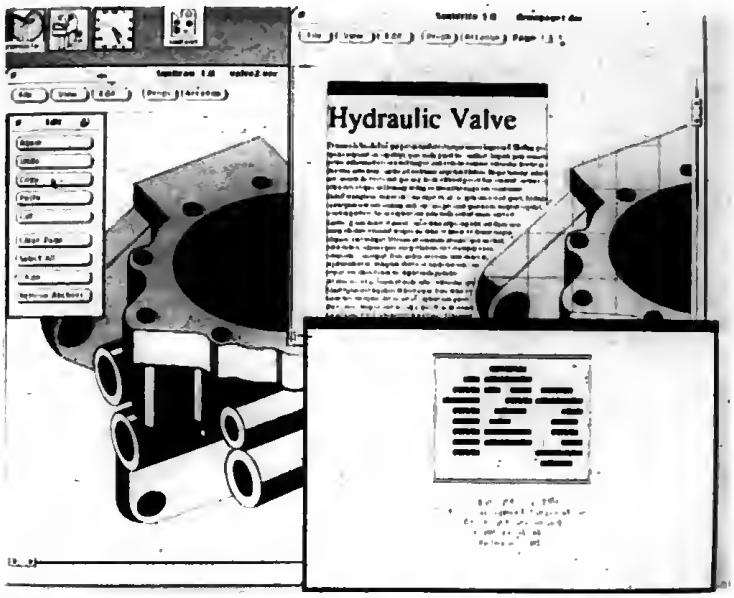

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sun microsystems

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Unix users

CONTINUED FROM PAGE 39

real happy with Sun's PC emulation or DOS Windows," said Arnie Taube, senior engineer at Deere Technical Services.

The Deere division, which makes extensive use of networked workstations, experimented with an IBM Personal Computer AT coprocessor card in one Sun workstation, Taube said, but found relatively slow disk access and poor mouse response using DOS applications.

"Using a mouse-based application such as Microsoft Word on the workstation is very slow, very sticky and very inconsistent," said Taube, who added that, based on those results, the firm decided not to add any more coprocessor cards.

Apollo Computer, Inc. touts using DOS applications in the Unix market for engineers to gain productivity in general business tasks. "The basic axiom is that the engineer does not want two machines on his or her desktop," said Mike Dillon, Apollo'a program manager for commercial markets.

Ness is not convinced that the market for software emulators will take off fast or stay around for the long run. "I look at it more as a bridge, a way to use the existing [DOS] software, but it really doesn't give you the full use of Unix," he added. "Just because you can emulate one environment doesn't mean you can automatically get the best of both worlds.

Nearly half of an engineer's time at Unix workstations is consumed by nonengineering work, said analyst Paul Cubbage at Dataquest, Inc., a San Jose, Calif.-based market research firm.

"We found that about 40% of general use of workstations is so-called business tasks," said Cubbage, who noted that engineers spend about that amount of time on general productivity applications such as electronic mail, graphics presentations, report writing and budgeting.

Cubbage said the largest application is word processing, which some users still accomplish through older Unix tools such as the Typesetting Runoff program Troff, a precursor to word processing programs. Others use Unix office automation packages such as the Alis integrated package from Applix, Inc., with integrated word processing, spreadsheet and electronic mail capabilities. Still, Cubbage added, "Very few engineers have DOS compatibility on their workstations.

"The emulation products are just kind of getting out to the market," said Cubbage of SoftPC and binary conversion software called XDOS from Mountain View, Calif.-based Hunter Systems. "It's so new that it's a nonsequitur."

TV station

CONTINUED FROM PAGE 39

ing, telecommunications, word processing and database management. "When we first got into computers four and five years ago, I wanted something that was easy to use and did not require a lot of training time," Curcuru said. "We're under pressure all of the time because this is a TV station, and I did not want a high learning curve."

The station's videotape editors use the network to operate computerized editing equipment to meet daily deadlines for the evening newscasts. The system has been designed to be as easy as possible to use, in part because the videotape editors are not particularly adept computer users, according to Curcuru.

"The actual functionality is just about as good as what you would get with a $100,000 dedicated videotape editing machine," he said. "And unlike a dedicated machine, when it is not being used for editing, it can be used for word processing or a multiple of other functions."

By using the network for videotape editing, an editor's learning time is shorter than with stand-alone systems, and there is an audit trail that allows the system administrator to monitor the amount of time spent on individual projects and track excessive personal use of editing facilities, Curcuru added.

The station also uses a stand-alone PC with an Intel Corp. 80386 microprocessor to operate a robot camera during specific portions of newscasts. Much of television camera work is fairly routine during a newscast, and a robot camera can be manipulated by a PC to step through a prescribed sequence of camera shots, Curcuru explained.

"With robot cameras, instead of a four-man camera crew, you only need two men, so there are salary savings and increased productivity," he said.

The station's use of automation to cut costs and boost productivity has been so compelling that WNEV-TV has been visited frequently by other television stations and newspapers that are looking for techniques and information for implementing similar operations at their own sites. "We have been talking to our chairman about selling what we know because we think it is valuable," Curcuru said. "With the cost squeeze, we're looking to be more effective."

WNEV-TV is also in the midst of analyzing software packages intended to bring automation to newsroom operations. But the programs that he has looked at do not go far enough, Curcuru said.

"Our concept of what a newsroom package should do is bigger than what is out there," he said. "We're looking beyond using it just to write scripts to using it as a control center for the entire newscast with videotape editing, robot camera control and more."

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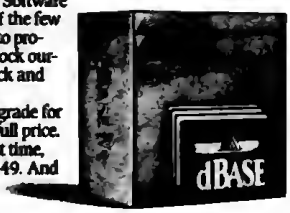

The media heavyweights have declared dBASE IV the winner by technical knockout. *Computer Currents* says, "It will dominate the MS-DOS and OS/2 market during the next two years." And *BYTE* raves, "It represents a quantum leap ... in functionality, power and ease of use."

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Barney

FROM PAGE 39

Juarez has maintained in court documents that ReBell has been siphoning money from Nantucket for trips and other "personal uses." He also alleged in these same documents that ReBell has been transferring Nantucket funds to other ReBell-owned firms with oddly suggestive names such as Auriferous, Inc. and Hilarian, Inc. Strangest of the bunch is Flatulance, Inc. This purveyor of tasteless greeting cards ain't selling software.

A Nantucket representative who asked not to be identified disputed nearly all of Juarez's countercomplaint, especially the conclusions drawn from the facts Juarez presented. The source said that ReBell signed a note for a $343,500 loan that he is currently paying back.

According to the "Software Industry Bulletin" newsletter, ReBell's record included a guilty plea to check forgery in 1966 and a 1979 conviction on four counts of grand larceny, which carried a four-year sentence in a California state prison. Ironically, Juarez was ReBell's attorney from 1982 to 1984 but never represented him in a criminal case. A Nantucket source confirmed the 1979 incident but did not confirm or deny the alleged 1966 plea.

If you buy the charges against the once-Marine and Vietnam vet Juarez, the ex-Nantucket president deceived ReBell into granting a generous employment contract. Then, ReBell's suit argues, Juarez went on to mismanage Nantucket to the brink of bankruptcy. If you buy the charges against ReBell, then customer dollars are not being sunk into R&D but into pleasure trips, greeting cards and other nonproductive uses.

J. R. syndrome

It is doubtful that anyone on the outside knows the truth. I certainly don't and only report the allegations, bizarre as they are. But it is clear that some smaller low-profile firms are run as if the officers watch *Dallas* and see J. R. Ewing as a role model. This makes them volatile, prone to failure and, in some cases, downright bad.

It is not certain that any of these adjectives apply to Nantucket. Its chief financial officer reports healthy profits and a growing stable bottom line.

For the sake of Clipper users who have invested hours and dollars in developing applications, let's pray that these suits get resolved and that new versions of Clipper come out that continue to push Ashton-Tate to develop better versions of Dbase.

Barney is a *Computerworld* senior editor, PCs & workstations.

Brandel

FROM PAGE 43

Sure, they're out there, but scant. Follow the leader.

Then the leader announced its long-awaited portable system to replace its ill-fated convertible. Customer response does not suggest that IBM is any more in touch with the portable market this time. A 21-pound, $8,000 batteryless laptop suggests only that IBM is targeting an elitist market.

Did I mention the $350 leather designer case? When asked what a customer should do if he is alotted only $4,000 to buy a portable, IBM's McCracken said "Wait."

With the exception of its gutsy move to the Micro Channel Architecture, IBM has done nothing in the last two years to suggest leadership. While companies such as Intel take technology to uncharted frontiers, IBM takes a wait-and-see approach. You get to wait with it.

Compaq rolled out the first 386 system and gave its customers a 386SX system months ago. Anyone taking bets on which of the two companies rolls out the 33-MHz 386 first? Does a yellow rose of Texas come to mind?

So, is IBM's idea of leadership to see what Compaq rolls out and then try to underprice that company and outfinesse it in the dealer channels? Sounds like a familiar strategy.

Brandel is a *Computerworld* senior writer.

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NEW PRODUCTS

Systems

Laserdata, Inc. has introduced the second generation of products for its Laserview document image management systems.

Corvette Scanstation and Corvette Viewstation display images in less than 0.5 sec., four times faster than current Laserview workstations, the vendor said. Both Corvette units offer a 19-in., 150 dot/in. resolution landscape monitor with a flexible windowing scheme, which reportedly permits users to view text and image windows simultaneously.

Corvette Scanstation offers the additional capability of scanning documents at 20 page/min, according to the company.

Corvette Viewstation costs $8,995, and Corvette Scanstation is priced at $33,850. Volume shipments are scheduled to begin July 1.

Laserdata
10 Technology Drive
Lowell, Mass. 01851
508-937-5900

Lundy Electronics & Systems, Inc. has introduced the Lundy 1612 Personal Graphics Workstation for computer-aided design, medical imaging, mapping and electronic desktop publishing applications.

The unit reportedly features a 20-MHz, Intel Corp. 80386-based processor and offers a 19-in. 1,600- by 1,200-pixel high-resolution color raster graphics display monitor. According to the vendor, it includes 1M byte of display list video random-access memory, which is expandable to 4M bytes; eight IBM Personal Computer AT-type expansion slots; and a 110M-byte hard disk drive.

IBM Video Graphics Array options are also available.

The Lundy 1612 is priced at $16,500.

Lundy
Computer Graphics Division
1 Robert Lane
Glen Head, N.Y. 11545
516-671-9000

Software applications packages

Computer Solutions, Inc. has introduced the Growthpower Powerstation, a manufacturing resource planning information system, personal computer-based productivity package.

The product was designed for use with the Hewlett-Packard Co. HP 3000 line of computers and the HP Image database in manufacturing environments, the company said. It reportedly provides managers with relational access to information in the Growthpower and Image databases by issuing industry-standard SQL requests directly from the PC.

Features include a point-and-shoot wipdows environment with a graphical user interface, and both executives and nontechnical workers have access to data for "what if" analysis functions, according to the vendor.

Prices start at $7,390 for the HP 3000 and $395 per PC, depending on number of workstations.

Computer Solutions
1 Burlington Woods
Burlington, Mass. 01803
617-229-2200

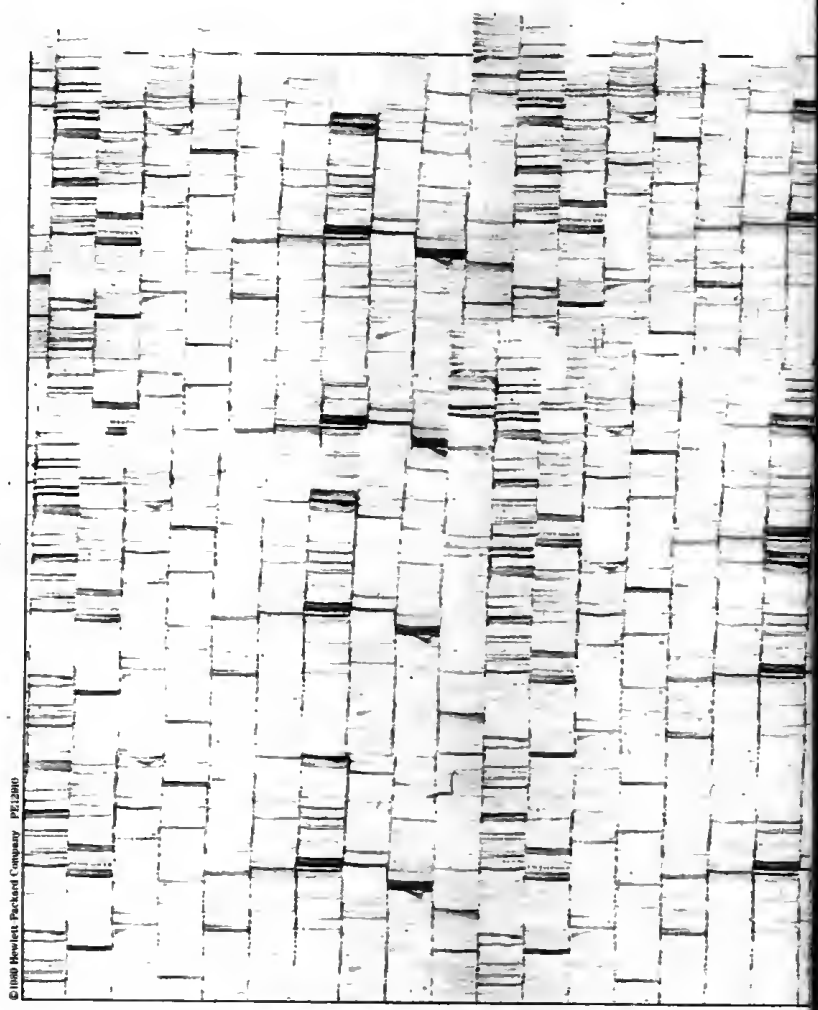
Precision Visuals, Inc. has released a version of its scientific visualization software for Sun Microsystems, Inc. workstations.

PV-Wave allows scientists and researchers to quickly navigate through large data sets for technical analysis, the company said. Functions include the ability to display four-dimensional data in the same picture or up to six dimensions in the same window. Pricing starts at $3,350.

Precision Visuals
6260 Lookout Road
Boulder, Colo. 80301
303-530-9000

Document filing software for IBM Personal Computers and compatibles is now available from Deerfield Systems, Inc.

Displayarchive can be used in conjunction with optical hardware to scan and store documents for later display or repro-



A major engineering company bought an HP LaserJet printer in April, 1986. Since then, it's been working seven days a week, 24-hours a day, printing up to 8,000 pages a month. And it's still going strong.

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duction. It can be used in a stand-alone system or a networked workstation environment. The package costs $495.
Deerfield Systems
221 Elizabeth St.
Utica, N.Y. 13501
315-797-1805

Ashton-Tate Corp. has announced its Multimate Advantage II Printer Enhancement Pack (PEP) software product.

The package offers laser-printing enhancements for Multimate Advantage II word processors. PEP includes a full graphics preview option and menu-driven printer and font selection capabilities. It costs $30.
Ashton-Tate
20101 Hamilton Ave.
Torrance, Calif. 90502
213-329-8000

Macintosh products

Claris Corp. has introduced MacProject II Version 2.0, reported to be an enhanced version of the company's project management software package for both MS-DOS and Apple Computer, Inc. Macintosh environments.

Additional functions include automatic resource leveling, cross-project resource analysis facilities and an unlimited number of calendars, according to the vendor. A spelling checker and on-line Help system are also provided.

The package is priced at $499, and Version 1.0 users can obtain the upgrade for $65.
Claris
440 Clyde Ave.
Mountain View, Calif. 94043
415-960-1500

Version 1.0.4 of the Nupaint monochrome paint program is now available from Nuequation, Inc.

According to the vendor, the software runs on Apple Computer, Inc. Macintosh computers, and the upgrade will be shipped free of charge to registered users. Additional features reportedly include color monitor support, a resizable eraser and the ability to mask additional areas. The program is priced at $139.95.
Nuequation
1701 N. Greenville Ave.
703
Richardson, Texas 75081
214-699-7747

Development tools

Meta Systems Ltd. has announced a Microsoft Corp. Windows-based computer-aided software engineering (CASE) tool for analysts and designers working in a Windows environment.

Dubbed Quickspec, the product reportedly includes an object-oriented CASE repository that allows personal computer users to enter, edit and review project information. The repository uses a representational model and can maintain data from different methodologies and diagram types, according to the vendor.

The software requires 640K bytes of memory, a hard disk and a mouse, the company said. It is priced at $3,500.
Meta Systems
Suite 200
315 E. Eisenhower Pkwy.
Ann Arbor, Mich. 48108
313-663-6027

Peripherals

Arche Technologies, Inc. has expanded its line of personal computer enhancement products.

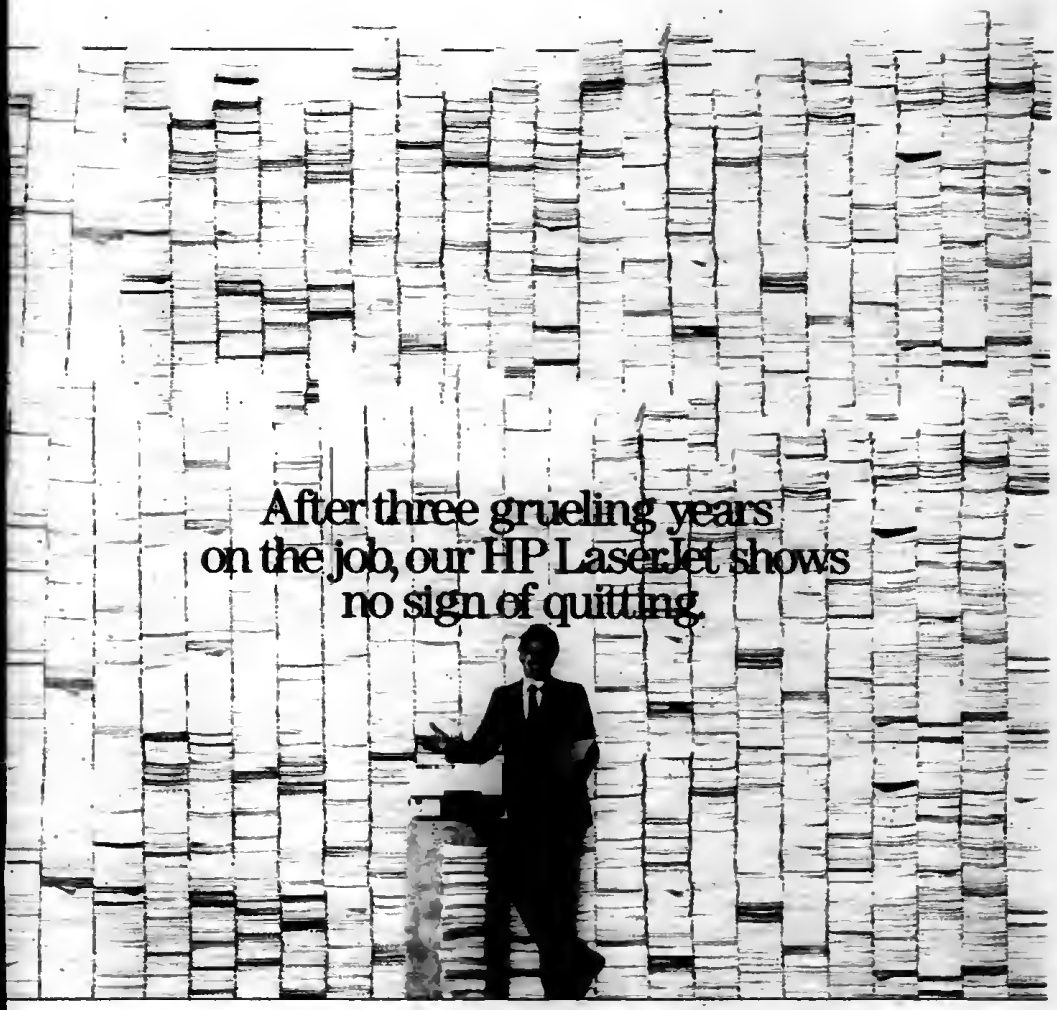
The single-slot Arche IBM Video Graphics Array (VGA)-compatible card supports most popular graphics standards and carries 256K bytes of on-board memory, according to the company.

With an auto-switching capability, the Arche VGA card can reportedly be used with a variety of IBM-compatible analog or TTL monitors.

The Arche VGA card carries a price tag of $350.

The 14-in. Arche VGA Monitor reportedly offers a 90-degree deflection, nonglare display screen and sports a price tag of $650.

Both products are covered by a two-year warranty, the company said.
Arche Technologies
48881 Kato Road
Fremont, Calif. 94539
415-683-6760



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DATA STREAM

Elisabeth Horwitt

Rough and stumble

Where are the micro-to-mainframe pioneers of yesteryear? Well, several have disappeared entirely, while others are recovering from rough times. I find this sad, considering that several of these companies were the first to offer the kind of useful micro-to-mainframe access tools that users take for granted today.

For example, in the early 1980s, Microtempus in Montreal helped pioneer the concept of the virtual disk: to enable users to access and store files on the mainframe as if it were just another disk drive on the PC. Linkware took that idea a step further by providing "virtual servers" — a mainframe "staging area" that is separate from the corporate database — enabling IS to provide PC users with extracts from the corporate database in a controlled, secured environment.

Informatics General broke ground by hooking up popular mainframe database environments with popular micro packages such as Lotus' 1-2-3. Phaser Systems championed the micro-to-VTAM link that provides users with efficient access

Continued on page 55

Novell exec defends Netware pace

BY PATRICIA KEEFE
CW STAFF

The major players in the local-area network market are in the process of moving their technology to more powerful and allegedly more open platforms. It will not be until mid to late 1990 that either 3Com Corp. or Novell, Inc. is able to produce all the pieces necessary to support such claims.

However, 3+Open has been shipping since October 1988, providing interested users with an opportunity to at least test LAN Manager and its relative compatibility with 3+.

Novell's recently unveiled Netware 386, however, will not be delivered until the third quarter at the earliest [CW, May 15]. So users not only have nothing to compare with the current Netware 2.15 family but also lack the means of investigating claims by competitors that Netware 386, which was written from the ground up, will create serious migration problems.

Novell's Calkins *addresses Netware 386 charges*

In response to critics, Mark Calkins, Novell's vice-president of software marketing, took time to separate the wheat from the chaff concerning Netware 386.

First, Calkins estimated that 97% of all network applications are client-based: "The biggest issue is to have to make changes in the client." But since Novell changed the server application programming interface (API), Calkins said, this means that "not one single change is required" for client-side applications. All the new security, print service and management facility APIs are server-based.

On the server side, back-end services, such as a database server, written to Novell's value-added process (VAP) interface will have to be rewritten

Continued on page 54

Inside

- Paine Webber squeezes $4M out of telecom costs. Page 53.
- Electronic funds transfer has not caught on. Page 55.
- FDDI wins support. Page 56.

GE cements MCI portion of network

BY ELISABETH HORWITT
CW STAFF

FAIRFIELD, Conn. — Not wishing to put all of its telecommunications eggs in one vendor's basket, General Electric Co. recently announced plans to sign a multimillion-dollar, three-year contract with MCI Communications Corp. GE was the first company to sign up for AT&T's Tariff 12 service in March 1987.

"Even before we signed up with AT&T, we had a policy that we would be a multivendor shop," said GE director of telecommunications Stan Welland. GE has already signed a similar contract with U.S. Sprint Communications Co., he added.

One of the main reasons for GE's multivendor policy is the need for redundant backup facilities in case one carrier's network goes down, Welland said. The widespread use of fiber-optic cabling has dropped prices but increased vulnerability for users' networks, since backup links often run over the same cable as the primary links and are equally susceptible to "a farmer with a backhoe or a man putting in a fence," Welland said.

Cut off

GE was one of many businesses affected by the severing of AT&T's main cable for the Northeast corridor in November, Welland said.

"Our alternate facilities with AT&T and other vendors allowed us to get back on-line in half an hour when both the 609 and 201 area codes were out," he continued. GE currently uses AT&T's Bandwidth Management Service to provide intelligent alternate routing scenarios over its backbone, Welland said.

Another reason for continuing relations with Sprint and MCI is it leaves open the option to shop around for network services GE may implement in the future, such as Integrated Services Digital Network offerings and fractional T1, Welland said.

GE's MCI contract will include volume discounts and provide the manufacturer with the option to use an array of services including MCI's virtual networking system, Vnet, and leased lines, Welland said. However, the contract does not include any part of GE's network backbone and "in no way impacts AT&T's status as GE's provider," he said. "We continue to be a very happy [Tariff] 12 user."

GE's Welland *endorses multivendor telecom contracts*

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Apollo launches security tool for networks

BY PATRICIA KEEFE
CW STAFF

CHELMSFORD, Mass. — Apollo Computer, Inc. recently unveiled a network administration tool said to be the first to manage and secure user log-on and password information across multivendor Unix networks.

The Passwd Etc user registry system runs in conjunction with Apollo's Network Computing System (NCS), a set of software tools that enable programmers to simultaneously distribute parts of an application across multiple machines. NCS has been licensed by more than 150 vendors, the company said.

Apollo plans to port Passwd Etc to some platforms and make the source code available to others. "We intend to make this a standard on Unix platforms," said Carol Rosenstock, product manager for portable systems administration.

Client software is available immediately for Sun Microsystems, Inc.'s operating system software, and a second port supporting Digital Equipment Corp.'s Ultrix will ship in the third quarter. Apollo will deliver server software for both systems in the fourth quarter, according to Rosenstock. "You won't need an Apollo server," he said.

Individual networks already have their own registration system to manage account information and access to computer resources. However, Passwd Etc was designed to deal with the complexities involved in assigning unique identities to users attached to distributed, multivendor networks.

"When you pull together multiple distributed networks, you often end up with duplicate names or information, as well as redundant efforts to maintain that information," Rosenstock said.

Instead of storing information on multiple files residing on machines through the network, Passwd Etc maintains a single logical database for all information, eliminating the potential for conflicts in log-ons and passwords that can occur in a multinetwork environment, she said.

The database sits on top of NCS and does not get involved with lower-level network protocols. Specific interfaces based on standard Unix facilities provide access into the database. Anyone trying to make a change must have the necessary privileges.

It's a secret

"The user doesn't know this is happening; the security process goes on behind a curtain," Rosenstock said.

The software reportedly works by capitalizing on the distributed nature of the network to minimize the complexity and overhead of administering large networks.

Since Passwd Etc is database-oriented, it allows systems administrators to make changes and updates automatically. It can also accommodate network growth in both scope and number of users.

Passwd Etc is composed of a server component that allows administrators to maintain a registry database and a client piece that allows the machines on the network to use the registry to log on, change passwords and update personal account information.

It is bundled in with Apollo's Domain/OS operating system and is standard with all Apollo workstations. Client software costs $1,000 per site. Server pricing has not been set.

OSI Network forum gains new members

BERNARDSVILLE, N.J. — Four new members have joined the Open Systems Interconnect Network Management Forum (OSI/NMF), an international organization dedicated to speeding implementation of OSI standards.

Joining the forum are McDonnell-Douglas Network Systems Co., Stratus Computer, Inc., Teknekron Communications Systems, Inc. and Ungermann-Bass, Inc. Formed last July, the OSI/NMF now boasts 63 members.

The forum is currently reviewing a draft specification that defines an initial set of applications messages. John Miller, OSI/NMF president, said the messages team has focused on event reporting and management of objects and attributes present in multivendor networks.

Event reporting functions covered include control of event reporting, control of event logging, a master event reporting function and an event report retrieval function. Also defined are generic models for describing configuration states and configuration relationships for managed objects in multivendor networks. Those objects can include voice and data switches, multiplexers, computer systems and software applications, among others.

In January, the group released a protocol specification based on the seven-layer OSI model said to provide the communications infrastructure necessary to support interconnection of diverse network management systems.

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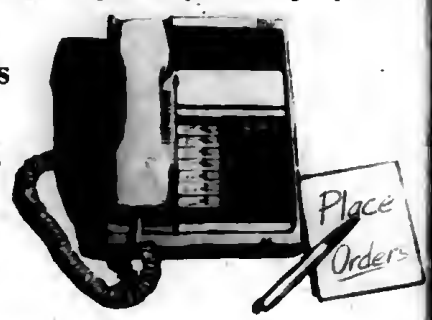

Paine Webber raids communications costs

ON SITE

BY ROBERT MORAN
CW STAFF

NEW YORK — Prompted by lean times in the securities industry, Paine Webber, Inc. has mounted a strategic attack on communications costs that has paid off in multimillion-dollar savings.

The company began its strategic assault last July and to date has saved $4 million. Terence McSherry, vice-president of communications, said he expects to save $10 million this year and $12 million in 1990.

With about 300 U.S. offices, Paine Webber's communications costs average more than $100 million per year, behind only real estate, salaries and compensation, McSherry said. This scenario is common in the securities industry, added Lou Capolino, president of DP Communications Corp., a communications consultancy in New York.

Economic survival mandates that securities and brokerages drive down the cost of a transaction, Capolino said, but telecommunications managers are not shrinking the cost of services rapidly enough. "Failure to drive down costs will give business to the competition," he said. "The control of the network is the control of your fate."

Paine Webber took fate into its own hands by developing a cost-cutting plan, establishing goals, organizing teams and developing project schedules.

McSherry isolated 21 projects, assigning project managers to hunt down cost savings in individual networks and branch operations. In addition, the company instituted contract and billing reviews, while also taking a tougher stance with vendors.

Using tracking and evaluating mechanisms, an MIS financial group established baseline costs and now reviews all bills for circuits, equipment and other charges.

"In many cases, we found mistakes amounting to hundreds of thousands of dollars and are now getting reimbursed," McSherry said. For example, Paine Webber found that services that should have been disconnected were still in place as much as a year later, he said.

Newer and cheaper

Reviews of branch offices prompted the removal of older Centrex systems for less expensive, state-of-the-art private-branch exchanges such as the Meridian SL-1 series from Northern Telecom, Inc. and the System 75 from AT&T.

A review team found that the company could save $1 million annually by building its own T1 backbone network. According to McSherry, the network, which is currently under construction, will replace the company's multidrop data network. In addition, the company now uses virtual networking techniques for its switched voice network.

McSherry said that such savings must be made visible throughout the organization. To that end, Paine Webber publishes its progress, holds scheduled progress meetings and rewards project managers with cash for saving the company money.

McSherry cautioned organizations to scrutinize contracts with an eye for their duration, automatic renewal clauses, the presence of escape clauses and the economics of leasing vs. purchasing. In addition, managers should seek bulk discounts and try to achieve national account status, he said. McSherry encouraged competitive bidding because, he said, "vendors always sharpen the pencil" to deal.

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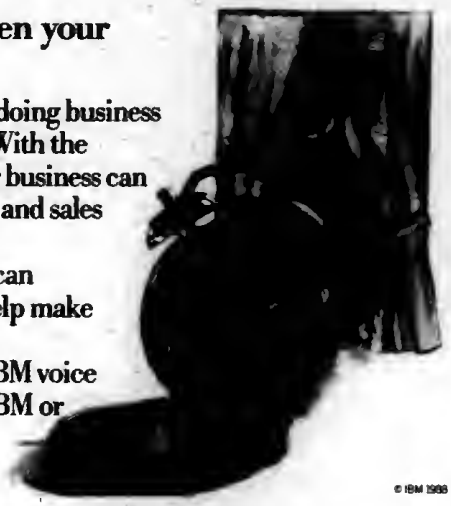

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BIT BLAST

CCITT close to V.42 bis approval

A study group within the **Consultative Committee for Telephony and Telegraphy** is said to be accelerating the process for approving V.42 bis, a data compression standard designed to work with the V.42 error-correction standard for modems. A draft of the V.42 bis specification was accepted by the study group in March; final acceptance is pending until a meeting scheduled for this fall.

The group decided to base the standard on an enhanced version of an algorithm developed by AT&T subsidiary Bell Laboratories. The standard is said to allow a 9.6K bit/sec. modem to handle throughput of 30K bit/sec. for text and 38.4K bit/sec. for spreadsheet files over dial-up connections.

Century Software in Salt Lake City claims to have released the first A/UX communications package. Century souped up its existing Term communications program with Apple Computer, Inc. A/UX compatibility. With Term Version 6.1, A/UX users can perform file transfers and terminal emulation under a number of environments. It may be a while before any other vendor joins Century. David Kosiur, editor of "Connections," a newsletter on Apple connectivity, said Apple is not selling many units of A/UX. However, the next upgrade may change that: It reportedly will include a finder and a Macintosh-like interface and ship late in the third quarter, he said.

Netware

FROM PAGE 51

to conform to the new Netware Loadable Module interface. Calkins said only 15 or so applications were written to the VAP. During the interview, he also ticked off rebuttals to the following charges or queries:

Since all APIs were rewritten, this will require a total rewrite of applications and drivers. Netware 386 will support all existing 286 applications. But those applications will have to be rewritten to fully exploit the 386. A new developer's tool kit and C-based library should ease the transition, according to Calkins.

Lee Doyle, an analyst at International Data Corp., a market research firm based in Framingham, Mass., predicted Novell may be less successful at getting large software houses, as opposed to small Netware-specific developers, to move their applications to Netware 386. He cited direct competition from LAN Manager as one factor.

Novell's APIs are tied to the chip and not an operating system. API changes resulting from the move to a new platform are related to the "quantum leap" in functionality between the two Intel chips — i.e., 16-bit vs. 32-bit processing. As there is little difference between the 386 and the 486, any changes to Netware as it moves to the new chip will be slight, if at all.

Differences between the 286 and the 386 in the way memory is moved and processing occurs internally will affect developers. "Baloney," Calkins said. "Dealing with memory is a piece of cake. We'll readily say that, yes, there are some new function calls, and the 15% you'll have to change is not a big deal."

Migration will be a nightmare for administrators. Critics claimed that network administrators will have to cope with a completely new environment. According to Calkins, a lot of the network administration utilities are the same. There are some differences, which administrators will have to learn — for example, a new network station monitor utility. But he insisted users will find Netware 386 easier to install, manage and learn.

The new platform lacks OS/2 server optimization. "We want to make sure that OS/2 client networking support is there," Calkins said. He admitted Novell's first OS/2 requestor for the client left a lot to be desired. However, feedback from developers on Version 1.1 has been positive, he said: "We are now finishing up on Named Pipes support and making the conversion of all Netware utilities" for a late June/early July release.

Will the Microsoft/Ashton-Tate SQL Server run on Netware? "Named Pipes support is all it takes to run SQL Server on Netware," Calkins said, adding that Novell announced plans to do this a while ago. "All you'll need is an OS/2 environment with Named Pipes on top of the transport protocol."

Clean upgrades will be difficult because Novell lacks standard transport protocol support. But Novell did announce what it calls a protocol engine architecture. At the low end is the Open Data Link interface co-developed with Apple Computer, Inc. At the upper end will be the new Netware Streams, which is based on the Unix standard. Novell has also said it will provide Transmission Control Protocol/Internet Protocol and Open Systems Interconnect support by 1990.

What to make of it?

Users had better brace themselves for the coming heat wave. New technology platforms produce more than just promises of increased speed, memory and storage. They also serve to provide fodder for a blast of vendor claims and counterclaims that serve mostly to stall MIS buying decisions.

When the rival suppliers involved are Novell and 3Com, the barrage of words and statistics usually falls hot and heavy.

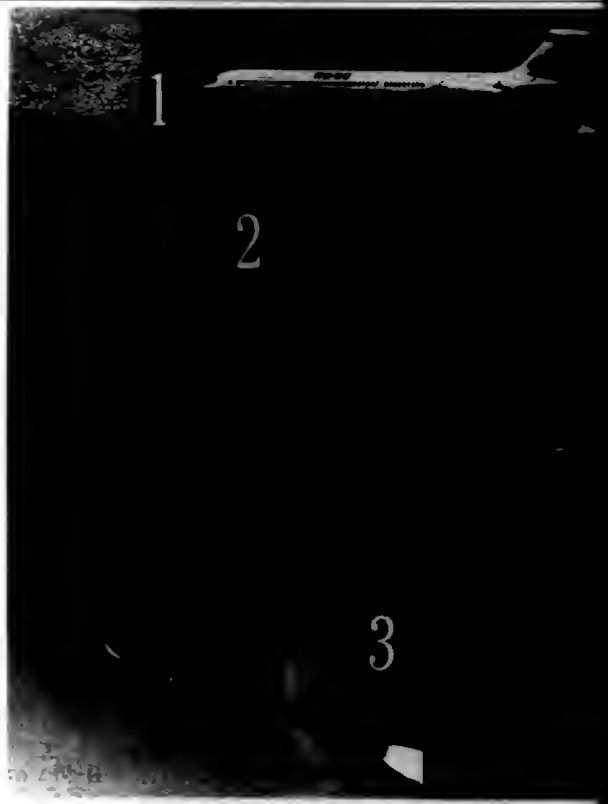
Users pondering the pros and cons of these new generations of network software from local network kingpins Novell and 3Com might want to consider two points: Migration to both Novell's Netware 386 [CW, May 15] and 3Com's OS/2 LAN Manager-based 3+Open are hung up on the same snag — application portability — and analysts estimate that users migrating up from either platform will encounter about the same degree of difficulty.

Regardless of network brand, in each case a server based on either platform will support its predecessor, be it Advanced Netware and SFT Netware or 3+. However, to exploit the capabilities of the new servers — whether an Intel Corp. 80386-based box or LAN Manager API — programs will have to be rewritten. In both cases, many of these changes will be shielded from even the developers, said Lee Doyle, an analyst with International Data Corp. However, users hoping to exploit the particular capabilities of these servers will have to wait until rewritten applications are ready.

While they wait, users might want to consider the tradeoffs involved in migrating to the latest versions of both brands of network software. Is the trauma of having to learn new commands or procedures and having to rewrite various programs worth the net gain in features and user productivity?

PATRICIA KEEFE

Look where our information systems are today.



It might surprise you to learn that our own aerospace companies are among our biggest customers. But it's true. And it makes a lot of sense. We wouldn't have been able to develop such sophisticated products unless we developed

Horwitt

FROM PAGE 51

to a variety of IBM mainframe environments.

Here is where these companies are today:

Microtempus went through serious financial trouble a couple of years back, culminating in reorganization and the replacement of its then-chairman with Larry DeBoever, an independent consultant and, interestingly enough, former president of Linkware. Microtempus has been profitable now for several quarters and is also on the verge of a major announcement, according to DeBoever.

Informatics General no longer exists; Sterling Software bought it several years ago. Likewise, Linkware got folded into Ungermann-Bass and hasn't been heard from since.

Phaser, based in San Francisco, was rescued from Chapter 11 a couple of years ago by Novell President Ray Noorda. Soon after, the company announced products to provide interactive communications between PCs on a Novell Netware local-area network and remote and local IBM hosts.

The company is "not doing as well as we'd like," one spokesman said. But it is preparing a "major announcement" in the next few weeks that will include a local, channel-attached host gateway for Token-Ring networks and will improve throughput by a magnitude of two to three times, the spokesman said.

No question but that it's tough to be a successful micro-to-mainframe software company these days. Particularly micro-to-IBM host software. The Big Guy keeps changing the rules of the game, and vendors need to second-guess which of IBM's innovations will be user must-haves and which will quietly drop by the wayside.

For example, most of the vendors we've talked about so far support LU6.2 in one way or another. But few vendors have had a lot to say lately about IBM's Extended Communication Facility (ECF) and Server-Requestor Programming Interface — either as products to support or as potential competition.

According to one software developer, IBM went off track for a while, with its sales representatives neglecting the potentially strategic ECF in favor of Netview Distribution Manager, which was initially designed to distribute applications between mainframes and System/36s and 38s — and also PCs.

However, rumor has it that IBM is back on the ball with ECF, planning to announce an OS/2 Extended Edition version in the next month or two.

Last week's announcement of Officevision, formerly known as SAA Office, is also likely to pose a tough choice for micro-to-mainframe vendors. Do they go for the whole banana, including "look and feel," or just set up a connection to the Officevision communications system via LU6.2?

I'm betting on the latter, at least until Officevision becomes the de facto standard for user interfaces. Which may not even happen.

Horwitt is a Computerworld senior editor, networking.

Financial EDI sees growth checked

BY ELLIS BOOKER
CW STAFF

CHICAGO — "The check's in the mail" retains its literal meaning for U.S. companies, precious few of which are using electronic funds transfer (EFT), a subset of electronic data interchange (EDI), as their preferred method of invoicing and payment.

"Paper is the way you do business in the financial arena," Daniel M. Ferguson told an audience of 200 people at the Corporate EFT and Financial EDI Conference here earlier this month.

Only 2.5% of U.S. and Canadian corporations use EDI, said Ferguson, conference co-chair and president of EDI Research, Inc., a market research company in Oak Park, Ill. He drew that number from his own 1988 survey, which indicated that 93.3% of the firms use traditional paper correspondence and a growing segment, 4.7%, is turning to facsimile and electronic mail.

For EDI in general, approximately 17% of the companies are using it, 14.5% plan to do so, and 57.8% do not plan on using the technology, according to EDI Research.

Still, interest in the financial application of EDI is high, Ferguson said, noting that this year's EDI/EFT meeting attracted about twice as many banking and corporate attendees as last year.

EFT between financial institutions — what could be called the wholesale side of the business — is a well-established phenomenon dating back to the 1970s. The National Automated Clearing House (ACH) network, set up by banks, is the largest U.S. electronic payments system and represents 17,500 financial institutions.

Of the 10 billion or so checks written every year by companies paying other companies, about 3% were handled electronically last year. The hitch for corporate customers is that ACH was originally designed to transfer value, not related financial documents. Only 20 or 30 banks in the country are set up for this full-scale financial EDI, and many still mail customers paper documentation for payments made electronically.

"In the corporate environment, money is worthless without remittance information," explained William G. Cafiero, the senior EDI consultant at GE Information Services. GE's financial EDI network, EDI Express, claims about 4,000 corporate customers and is the market leader among value-added networks offering financial EDI, Cafiero said.

1 With EDI*Net,® our Electronic Data Interchange service, our MD-80 suppliers get our purchase orders in short order.

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Ungermann-Bass, Proteon unfold FDDI plans

BY PATRICIA KEEFE
CW STAFF

The Fiber Distributed Data Interface (FDDI) picked up support last week, as general-purpose network vendor Ungermann-Bass, Inc. and Token-Ring supplier Proteon, Inc. unwrapped plans to embrace the emerging standard for 100M bit/sec. network transmission.

The vendors plan to release FDDI bridge and router products, respectively, in the fourth quarter, which is when the standard committee is expected to finalize the station management portion of the standard.

UB also announced completion of the first phase of its first FDDI network — a backbone network currently being installed at Microsoft Corp.'s Redmond, Wash., headquarters. When completed, Microsoft's FDDI backbone will interconnect more than 20 UB Ethernet subnetworks, serving 6,000 employees at the 11-building campus.

Requirements satisfied

"This should satisfy our network backbone requirements well into the 1990s," said Joseph Montenleone, Microsoft'a manager of corporate systems. His UB Net/One network will have the additional capacity to accommodate growth as Microsoft adds more users and subnetworks, as well as supporting voice and video transmission applications in the future.

UB President Ralph Ungermann said the Microsoft project is the first step in an aggressive plan to develop FDDI bridge products within Access/One. The standards-based network software provides Ethernet, Token-Ring, asynchronous and IBM 3270 connectivity to networked workstations over unshielded twisted-pair cables and other media.

Ungermann said his Santa Clara, Calif.-based company will deliver FDDI bridges to Token-Ring as well as Ethernet. These products will include network management support, migrating the capabilities of Net/One and Access/One to FDDI.

Westboro, Mass.-based Proteon introduced an FDDI version of its P4200 multiprotocol internetworking router. Positioned as a corporate backbone, it reportedly will interconnect different types of local-area networks across FDDI while also providing direct connections to multivendor hosts, workstations and routers located on the backbone.

Proteon claimed other FDDI products are frequently limited to vendor-specific communications.

Company President Patrick Courtin said he believes the FDDI standard will be mostly settled by the end of the year. In the meantime, Proteon is working with a consortium of other vendors — including Sun Microsystems, Inc., Apollo Computer, Inc. and Prime Computer, Inc. — to ensure interoperability between FDDI implementations.

Current P4200 router users will receive a 35% discount toward the FDDI upgrade.

Blast-off

Last week, Fibercom, Inc. in Roanoke, Va., announced that it had been selected by the National Aeronautics and Space Administration to design and produce components for what it claimed will be the first FDDI network to be used in space.

Fibercom has agreed to develop ring concentrators for an FDDI LAN network that will provide space station Freedom's personnel with access to a database system designed by IBM, according to the vendor.

Some concentrators will be operating outside the station, so they will be specifically designed to survive in space, according to Fibercom. The concentrators need to be able to operate in a vacuum while being subjected to wide temperature fluctuation and low radiation for more than nine years without failure or need for repair, the vendor said.

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NEW AT DEXPO SOUTH '89

The following products were announced at Dexpo South '89:

• **Pacer Software, Inc.** in La Jolla, Calif., announced Pacershare, the company's Apple Computer, Inc. Appleshare-compatible file server software package.

Pacershare reportedly enables a Digital Equipment Corp. VAX, Microvax or Vaxstation running Ultrix to function as a file server for an Apple Macintosh network. Files stored on the VAX system appear to the Macintosh user as icons that can be accessed in the familiar Macintosh style, according to the vendor. Pricing is based on the number of concurrent sessions and starts at $2,400 per VAX for five concurrent user sessions.

• **Micom Communications Corp.** introduced the Instagate 1500 Terminal Server Gateway, designed to provide an interface between Ethernet local-area networks and Micom's Instanet Data private automatic branch exchange (PABX) or Data Distributor.

According to the vendor, the product is especially suited for current Micom Data PABX users who require interconnectivity to Digital Equipment Corp. Ethernet LANs, or for other Ethernet LAN users who want to add wide-area networking options.

The Instagate 1500 costs between $164 and $265 per port, depending on application, and is scheduled for beta-test release in July, the company said. Micom is headquartered in Simi Valley, Calif.

• **KEA Systems Ltd.** in Vancouver, B.C., has expanded the company's line of terminal emulation products with the announcement of Zlat.

Zlat is reported to be a personal computer-based local-area transport (LAT) driver that allows IBM Personal Computers to connect to Digital Equipment Corp. VAX computers via Ethernet and DEC's LAT protocol. The product requires 35K bytes of random-access memory and will initially support the 3Com Corp. 3C501 Etherlink card and Interlan, Inc.'s NI5010 Ethernet card, according to the vendor.

Scheduled for delivery in June, Zlat will carry a price tag of $150. Dealer and quantity discounts are available.

NEW PRODUCTS

Local-area networking hardware

Samsung Information Systems America has introduced an Intel Corp. 80286-based diskless workstation that incorporates four expansion slots, the company said.

Dubbed the PC terminal/286, the 12-MHz unit was reportedly co-developed with Novell, Inc. and is optimized for Novell's Netware local-area network operating system. The product comes standard with 640K bytes of random-access memory, expandable to 15M bytes, and a Netware-compatible boot-programmable read-only memory.

Scheduled for delivery in the second quarter, the workstation will carry a price tag of $1,795.

Samsung Information Systems
3275 N. First St.
San Jose, Calif. 95134
408-434-5482

Asante Technologies, Inc. has announced the Macon II/E Ethernet interface card for Apple Computer, Inc. Macintosh II computers.

The card reportedly provides 32-bit data transfer and is said to be register-level-compatible with Apple's Ethertalk interface card. It was designed to facilitate networking with IBM Personal Computers and compatibles and is priced at $595.

Asante Technologies
Suite G
1050 E. Duane Ave.
Sunnyvale, Calif. 94086
408-736-3360

Madge Network Ltd. has introduced the Micro Channel Architecture Ring Node, designed specifically for IBM Micro Channel workstations, the company said.

The product is reported to be compatible with IEEE 802.2 and 802.5 standards, and operates under most personal computer network operating systems, including Novell, Inc.'s Netware and IBM's PC-LAN.

The MCA Ring Node is shipped with a complete local-area network support program and diagnostic software, the company said. The product has 3K bytes of onboard memory and costs $695.

Madge Networks
534 Salem Ave. S.W.
Roanoke, Va. 24016
703-982-0638

An Ethernet controller designed specifically for Apple Computer, Inc. Macintosh IIs has been introduced by Interlan, Inc.

The NIA310 Macconnect Ethernet Data Link Controller provides Macintosh users with direct access to 10M bit/sec. Ethernet.

The Ethernet controller runs on Macintosh II, Macintosh IIX and Macintosh IICX machines and is said to conform to Nubus specifications and IEEE 802.3 networking standards, the company said.

The product is priced at $549, and volume discounts are available, the vendor said.

Interlan
155 Swanson Road
Boxboro, Mass. 01719
508-263-9929

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Manager of Managers.

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This is only one of our insights into emerging information technologies. For now-minded futurists, a state-of-the-art NYNEX network management solution can answer needs like call accounting, bill verification and configuration management, as well as network planning and design.

Local-area networking software

Wang Laboratories, Inc. has introduced a networking software interface for the Freestyle personal computing system.

Wang announced Freestyle support for Banyan Systems, Inc.'s Vines, Novell, Inc.'s Advanced Netware, 3Com Corp.'s 3+Share and 3+Open and the IBM Personal Computer LAN Program.

Freestyle, which was announced last fall, reportedly combines an electronic tablet, pencil and telephone-like handset with which users can add handwritten or spoken comments to the contents of a data file.

The Freestyle-LAN uses Wang's LAN Office as a transport medium. Scheduled to be available in the third quarter and priced at $100 per PC, it permits data exchange within a LAN, with Freestyle PCs in other LANs and with Freestyle PCs in a Wang VS network.

Wang Laboratories
One Industrial Ave.
Lowell, Mass. 01851
508-967-1523

Network Research Corp. has announced that its Fusion Network software is now available for Hewlett-Packard Co.'s 9000 Series 200 and 300 Pascal workstations.

Fusion for PWS provides HP 9000 workstation users with Transmission Control Protocol/Internet Protocol multivendor networking capabilities, the company said. The software is reportedly bundled with network management utilities and a programmatic socket library interface for network application development. The product has a price tag of $1,000.

Network Research
2380 N. Rose Ave.
Oxnard, Calif. 93030
805-485-2700

A software product that reportedly allows remote connectivity in IBM Personal Computer, PC XT, AT, Personal System/2 and compatible computer environments is now available from Norton-Lambert Corp.

Close-up/LAN was designed for work group conferencing, network support and management, distributed processing and as a local-area network gateway to minicomputer and mainframe systems, the company said. The product is offered in configurations supporting from two to 64 users, and pricing ranges from $395 to $1,995.

Norton-Lambert
P.O. Box 4085
Santa Barbara, Calif. 91340
805-964-6767

Links

IBM has expanded its line of 3174 controllers with the announcement of nine new models. These additions reportedly will replace the first generation 3174s, which will be withdrawn from marketing in August, the vendor said.

According to the company, the 11L, 11R, 12R and 13R models were designed for large establishments and can attach up to 32 IBM 3270 devices and as many as 24 ASCII devices. They are priced from $10,960 to $14,260.

The 61R, 62R and 63R controllers are reported to be intermediate-level offerings and provide support for as many as 16 IBM 3270 devices and eight ASCII devices, the company said. Pricing ranges from $6,500 to $8,155.

The vendor is also offering two smaller models, the 91R and 92R, designed to connect as many as eight terminals and workstations to an IBM Systems Network Architecture network. They are priced at $3,855.

IBM
1133 Westchester Ave.
White Plains, N.Y. 10604
914-642-3000

Digital Communications Associates, Inc. (DCA) has enhanced its E78 Plus and Windowlink for Irma software packages. E78 Plus now includes E78 Lite, an entry-level package for personal computer-to-mainframe communications; a new keyboard monitor; and new display capabilities, the company said. The product is priced at $395.

Windowlink, an IBM 3270 emulator for use with Microsoft Corp.'s Windows, now features support for DCA's PC-resident FT/3270 file transfer software and IBM's mainframe-based 3270 PC file transfer program.

In addition, Windowlink now supports DCA's application programming interfaces for IBM's Server Requestor Programming Interface and Professional Office System software. Windowlink is also priced at $395.

DCA
1000 Alderman Drive
Alpharetta, Ga. 30201
800-241-4762

A handheld device that reportedly allows users to call in to a host computer from any location in the world has been announced by Lee Mah Datacom Security Corp.

Called Infokey, the product provides security by designating "legal" callers to the host, according to the company. The unit was designed to operate with the vendor's Traqnet 2000 systems and will interface to any external or internal modem through standard telephone jacks. Infokey costs $150.

Lee Mah Datacom Security
3948 Trust Way
Hayward, Calif. 94545
415-786-0790

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Electronic mail

Titn, Inc. has announced the addition of X.400 software to its Twice family of Open Systems Interconnect (OSI) data communications protocol products.

Twice X.400 provides message handling services as specified by the X.400 recommendations for electronic mail and supports the major U.S. and international networking standard profiles, including Government Open Systems Interconnect Profile. Royalty-bearing and royalty-free software licenses start at $60,000.

Titn
24301 Southland Drive
Hayward, Calif. 94545
415-785-5970

Network management

Codex Corp. has introduced Release 2 of its 9800 Network Management System.

The product was designed to integrate management for the vendor's entire line of systems modems and statistical multiplexers, and the latest release reportedly allows users to manage Codex 2600 series leased-line modems as well.

The system consists of hardware, software and network services, with the software running on the Apollo Computer, Inc. Domain workstation platform, according to the company.

Pricing starts at $50,000 and is said by the company to include design, software subscription, installation, configuration, training and maintenance.

Codex
20 Cabot Blvd.
Mansfield, Mass. 02048
617-364-2000

A personal computer-based, centralized management system designed to remotely monitor and configure dial-up modems has been announced by Universal Data Systems.

The Globalview mouse-driven system allows communications managers to monitor and configure any local or remote device and is ideal for applications in which information flows to or from a central site, the company said.

The product reportedly consists of an Intel Corp. 80286-based Personal Computer AT controller, custom Microsoft Corp. Windows-based network management software, a 20M-byte hard disk and a series of equipment racks that can support up to 512 devices per controller via an RS-422 interface.

Additional features include password and security protection, and up to 16 racks may be supported per controller. The company also plans to offer support for IBM's Netview/PC.

The Globalview base system includes a 2,400 bit/sec. dual-modem and one data shelf. It is priced at $6,000. Delivery is scheduled for the third quarter.

Universal Data Systems
5000 Bradford St.
Huntsville, Ala. 35805
205-721-8000

Compcontrol, Inc. in the Netherlands has introduced a management software product that drives a complete IEEE-488 instrument network, the company said.

The network is implemented in the CC-91 VME-GPIB computer module of the vendor's VME bus system. The IEEE-488 management software runs with the OS-9/68000, /68020 and /68030 operating systems, Version 2.2, and supports controller, talker and listener functions, the vendor said. It is priced at $975 with OS-9 drivers priced separately.

Compcontrol
Netherlands Consulate General
Economic Section 2a5-88
One Rockefeller Plaza
New York, N.Y. 10020
212-246-1429

A software package that reportedly saves 90% of the time spent on most common system management tasks for Sun Microsystems, Inc. workstations is now available from Patibles Technology, Inc.

According to the vendor, Gurutape complies with Unix networking standards and was designed specifically for network-based systems management. The menu-driven program reportedly provides file backup and storage; terminal and peripheral configuration and control; user account and group maintenance; and system control functions.

Gurutape is priced at $995, and a stand-alone version is available at $895, the vendor said.

Patibles Technology
100 E. Washington St.
Syracuse, N.Y. 13202
315-422-2224

Fibronics International, Inc. has released an enhanced version of its network management software for the Fibronics Advanced Cabling Systems (FACS).

The FACS Network Management Software 2.0 monitors more than 30,000 terminals in any single network, according to the company. The product reportedly uses an IBM Personal Computer as a dedicated management station and is targeted toward large on-premises installations and multibuilding campus environments. Hardware requirements include Fibronic's NMS FM872 Controller and an NMS FM 874 Buffer for installations with more than 16 Fibronics Universal Multiplexers, the company said.

FACS NMS Version 2.0 is priced at $495.

Fibronics International
Communications Way
Independence Park
Hyannis, Mass. 02601
617-778-0700

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MANAGER'S JOURNAL

EXECUTIVE TRACK

Carroll R. Franklin has been named vice-president of the planning and management information department at **Government Employees Insurance Co.** (GEICO) in Washington, D.C.

Franklin was promoted from assistant vice-president of planning and management information. His previous positions at GEICO included planning and analysis director and cost-benefit administrator.

Franklin joined the firm in 1978 after retiring from 22 years in the U.S. Marine Corps as a lieutenant colonel. He holds master's degrees from the University of Rochester and George Washington University and a bachelor's degree from the U.S. Naval Academy.

Blue Cross & Blue Shield of Ohio in Beachwood, Ohio, announced three appointments. **Frank Gliha** was named manager of technical support for the Eastern and Western divisions. He has more than 15 years of experience managing technical support functions at Argo-Tech, Transohio Savings Bank, Gould Ocean Systems, Johnson & Johnson and Curtis Industries.

Andrew J. Balazs was named director of computer centers. A five-year veteran of the firm, he was previously manager of the Beachwood data center. His replacement in that post is **Thomas Hearn**, who has 12 years of experience in data center operations.

Who's on the go?

Changing jobs? Promoting an assistant? Your peers want to know who is coming and going, and *Computerworld* wants to help by mentioning any IS job changes in Executive Track. When you have news about staff changes, be sure to drop a note and photo or have your public relations department write to Clinton Wilder, Senior Editor-Management, *Computerworld*, Box 9171, 375 Cochituate Road, Framingham, Mass. 01701-9171.

Building systems to last at Met Life

Cavanagh's career spans the computer evolution, from flat files to DB2

BY ROBERT MORAN
CW STAFF

PROFILE: Daniel J. Cavanagh

JOHN BARTON

Position: *Senior vice-president of IS, Metropolitan Life Insurance Co.*
Mission: *To build the expertise and cost advantages associated with expert and imaging systems*

Daniel J. Cavanagh's 32-year career is part of Metropolitan Life Insurance Co.'s computing infrastructure. The company's information systems organization bears his mark throughout, because he lived the backroom procedures and business operations that he later automated with IS.

Although the databases of the systems have evolved from flat files to IBM's DB2 and the balance of use has shifted from batch to on-line, the systems are essentially the same today as they were when Cavanagh became their chief architect in the early 1970s.

"We have had to reengineer some of the systems and change the way in which they function, but we haven't changed them dramatically, and they are essentially the same systems I built," Cavanagh says.

That is a rare display of pride for the reserved Cavanagh, who started with the company in October 1957 as an insurance trainee in the industrial insurance department. He progressed for 14 years through numerous positions in the company's back offices until he became a manager in electronic project development in 1972. He was promoted to his current position of senior vice-president of IS in 1983.

Sparks fly

Cavanagh entered the information systems field after doing graduate work in 1966 and 1967 at Baruch College in New York. Classmates who were working with computers in their own companies sparked his enthusiasm, he said.

"Dan has worked in the back rooms over the years, and he knows the fundamentals of the business," says Donald Odell, the executive vice-president to whom Cavanagh reports. "He isn't an information systems type who lives up in the clouds — he can see how this fits together."

Cavanagh, however, is physically up in the clouds about five days a month, flying to conferences, vendor meetings, internal customer sites or the New York-based company's data centers in other states. Cavanagh says that he prefers "to hear firsthand what is going on and to meet other people."

Although 20% of Cavanagh's time is now spent boning up on the technology, he dedicates the lion's share to keeping pace with the problems and progress of about 1,000 employees. Eight or more employees from the same level of the IS organization meet

Continued on page 64

Corporate culture key to IS success

BY CLINTON WILDER
CW STAFF

It's not just a package. It's their corporate culture.

The secret to Federal Express Corp.'s leading-edge use of technology for marketplace advantage is a corporate philosophy that encourages creativity, tolerates failure, promises full employment and focuses on the single goal of 100% on-time delivery. The philosophy comes from the top — Chairman Fred Smith.

"We have a [technology] champion who happens to be chairman of the board," said Chris Demos, a Federal Express senior business adviser for strategic integrated systems, during a recent conference of information systems executives at Babson College's Center for Information Management Studies in Wellesley, Mass.

Demos said Federal Express spends $200 million annually, or about 5% of revenue, on information technology. When asked how that spending is cost-justified to top management, Demos described the Memphis-based firm's commitment to the value of package-tracking information for its customers.

"We strongly believe that information about the movement of the package is as important as the package itself," Demos said. Federal Express guarantees that customers must receive tracking data within 30 minutes of requesting it, or the delivery is free.

Applications developers are required to work as couriers for six weeks to fully understand the business they are supporting. The menu prompts on Federal Express's Supertracker handheld scanners were designed by couriers, not software engineers. "It speaks in courier-ese, not tech-ese," Demos said. "To us, software quality means not just debugging but ensuring that it does what the user wants."

What's next in the Federal Express technology arsenal? Demos said the firm is researching improved graphic displays of route maps and expert systems to advise operations personnel of the best recovery scenarios after equipment breakdowns or weather delays. "We're trying to be more proactive, to go beyond information-gathering to process control," he said.

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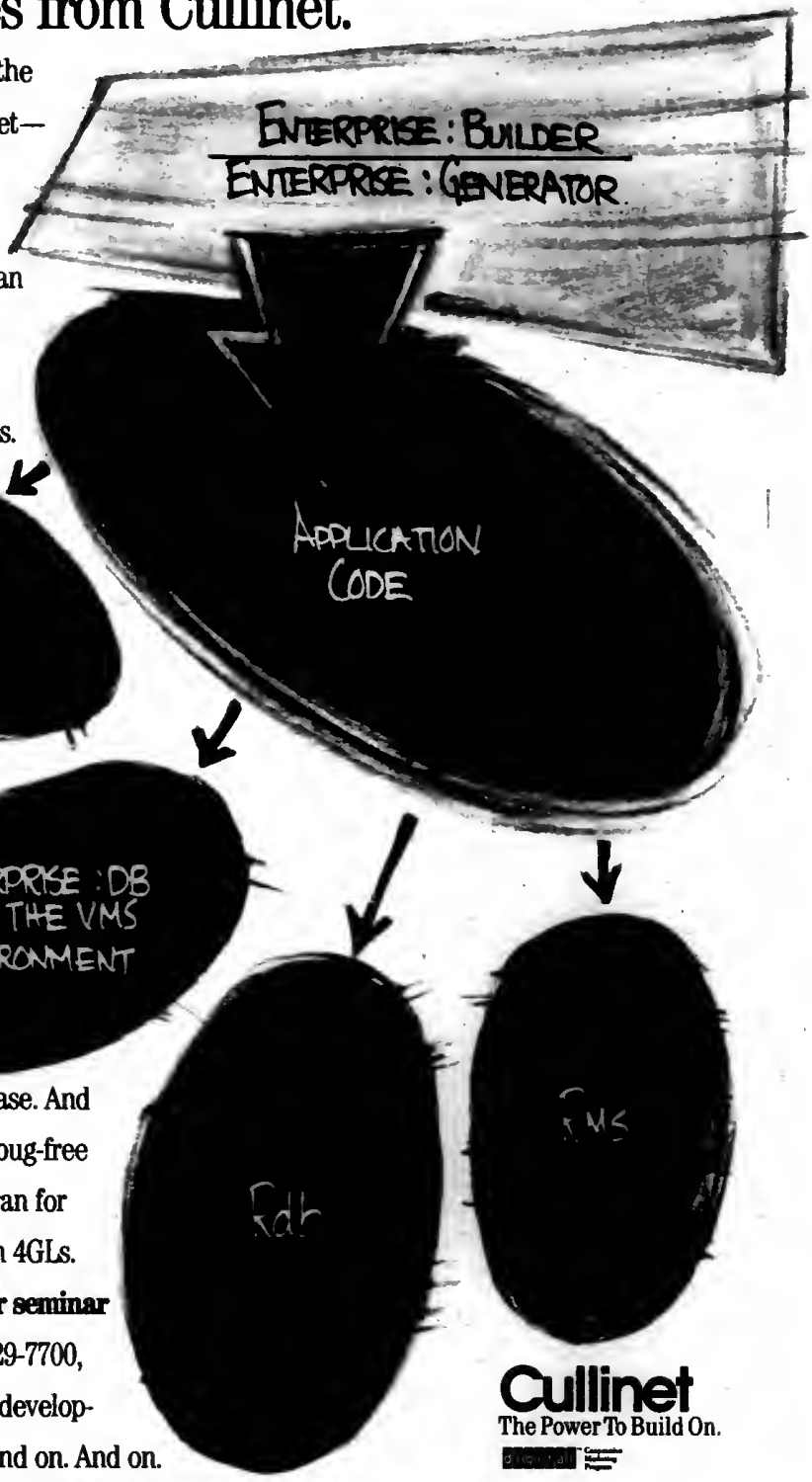

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From mainframe to PC

Borg Warner's forced downsizing cuts IS budget in half

BY ELLIS BOOKER
CW STAFF

CHICAGO — Don't tell Leonard Murrell and Steve Derry about "corporate consolidation." The pair have lived this phrase for the past 14 months, transferring Borg Warner Corp.'s information systems operation from an IBM 4341 mainframe to a personal computer-based local-area network.

In July 1987, Borg Warner was the object of a takeover attempt and as a protective strategy went private in a leveraged buyout. Later, to manage the resulting $4.5 billion debt load, the firm sold four of its six businesses, leaving just two operating groups — Borg Warner Automotive, a half-century-old automotive parts business, and Borg Warner Protective Services, the largest armed car and security guard operation in the U.S.

The impact on IS at the Chicago corporate headquarters was immediate. The MIS director was let go and not replaced, and two of his four managers followed. IS staff contractions continue at Borg Warner, matching the reduction in the headquarters staff, which has shrunk from 235 people five years ago to just under 100 today. The IS department now claims seven full-time employees.

Murrell and Derry confronted this environment head-on when they walked into the office of the controller of the corporation in January 1988. The controller issued the following directive: Cut the IS budget — then $1 million but historically around $1.5 million a year — to $500,000.

The two were given just seven weeks to devise a plan, which had to be put into effect by the end of the year.

"The off-the-wall part was to keep it a secret," said Murrell, manager of systems and programming. "But the only possible way was to get everyone [in the department] involved." So Murrell and Derry, the manager of technical support, brought the nine remaining employees into a room and explained the situation.

At the heart of the cost-savings was dismantling the firm's IBM 4341 at its Des Plaines, Ill., computing center. The mainframe was linked via a 56K bit/sec. dedicated line to a 90-station CRT network at headquarters on Chicago's Michigan Avenue. The processor had been moved to the suburbs in October 1985 to avoid a costly air-conditioning system upgrade at the downtown computer center.

BorgWarner

"The IBM rep's solution was a System/38," Murrell said. But that presented a twofold problem. First, the existing cable would have to be replaced and new terminals put in. Second, applications from the mainframe would have to migrate from the 4341's DOS/VSE to the System/38's CPF operating system.

Before their seven-week clock began ticking, Murrell and Derry had a "blue-sky" session in which they considered many alternatives to the 4341, including LANs. But could they move the applications over?

Although they had no experience with LANs, they did have some familiarity with PCs. Prior to the buyout they had replaced the typewriters in headquarters with IBM Personal Computer XTs equipped with Irma boards and connected via 3274 controllers to the suburban computer center. "In the end, we allocated $260,000 and decided a LAN was the way to go," Murrell said. The two elected to put in a Novell, Inc. network and use two Novell 386 servers, one for the accounting department and one for the human resources department.

The human resources department had run two sorts of applications on the mainframe: a corporatewide investment plan for 401K tax reports, and a "people database" for tracking pension plans and other data for Borg Warner's 70,000 employees.

User-friendly choice

The IS staff, which prepared the tax forms and managed the people database, was the "user" in this case and so got a chance to vote on applications software. The group selected Ashton-Tate Corp.'s Dbase, a choice Derry said he believes was made out of an instinct for survival. "They wanted a package that was marketable elsewhere," he said.

Both Murrell and Derry like the flexibility of the LAN and say their accounting department users appreciate the friendliness of the general ledger program. All the software is up and running, and a cautious, small-scale test of Dbase IV is under way.

Meanwhile, the automotive and protective services divisions, headquartered in Troy, Mich., and Parsippany, N.J., respectively, had always been PC-based, and so their connection to Chicago headquarters and its new LAN is, if anything, easier to manage. Both divisions transmit their monthly, quarterly and annual financial data to Chicago via dial-up lines. Both still rely on the 3270 protocol emulation software they used during the time of the 4341.

On the downside, however, both men long for the support they enjoyed from their IBM representative. Dissatisfied with his original LAN dealer, Murrell recently switched to another Chicago-based firm. The experience prompted him to offer the following advice: "Find someone big enough to handle problems, and take your time. Last year we did everything in a hurry."

Although Derry said moving the applications from the 4341 "pushed the LAN to the limit," he found the experience enlightening. Indeed, he suspects other mainframe shops might benefit from a LAN conversion, if only they would consider the possibility. "I think some shops are keeping their host out of force of habit," he said.

Foreign and U.S. execs see eye-to-eye on top IS issues

BY CLINTON WILDER
CW STAFF

WELLESLEY, Mass. — Overseas information systems executives share most of the views of their U.S. colleagues on the top issues in IS, according to a recent survey conducted by Babson College's Center for Information Studies.

When asked to rate 18 issues in order of importance, 50 U.S. executives and 29 foreigners, mainly European, chose the same top five issues, although in different order. To U.S. executives, the No. 1 issue was "rapport and credibility with senior management." This issue, with slightly different wording, finished first in an Andersen Consulting survey earlier this year. Senior management rapport ranked second as a concern for non-U.S. executives behind "ability to recognize and exploit strategic systems opportunities."

Further down the list, however, there were notable differences between the opinions of foreigners and Americans. "Employment of effective application development procedures" garnered eighth place on the U.S. list, but only 12th on the overseas ranking.

When the survey was presented to IS executives at a recent conference here, one observer noted the apparent paradox between the foreigners' No. 1 ranking for strategic systems and the low priority for applications development methods. "It's not applications development" that is so important, replied Stewart Wilson, head of research at Rolls-Royce Ltd. "It's deciding what application to develop."

Another notable difference was the placement of "availability of a tested security/backup plan," which was ranked sixth by non-U.S. executives but only 12th by Americans. One American suggested that the discrepancy was due to the relatively low level of terrorist activity in the U.S. compared with Europe.

A Swiss executive responded that it is the relative scarcity of disaster recovery alternatives, at least in his country, that makes an IS backup plan more imperative. Americans ranked "cost control and containment" 10th, compared with 14th on the non-U.S. list.

Hands across the water

Top five issues facing MIS, as ranked by 50 U.S. and 29 foreign IS executives

	U.S.	Non-U.S.
Rapport and credibility with senior management	1	2
Knowledge of the business	3	3
Strategic systems opportunities	3	1
Long-range vision and plan	4	5
Skills mix and motivation of IS personnel	5	4

SOURCE: BABSON COLLEGE CENTER FOR INFORMATION MANAGEMENT STUDIES — CW CHART

Met Life

FROM PAGE 61

with Cavanagh in impromptu coffee klatches to discuss what is on their minds — and his.

Whether the employees are from the lower rungs of the corporate ladder or are those who work closest to him, "they respect him but aren't intimidated by him," says Al Giordano, vice-president of IS, who reports to Cavanagh. "He has the ability to get employees at all levels to feel relaxed and open up and ask him questions."

In part, the relaxed response comes from Cavanagh's evident confidence in his people. Indeed, when Cavanagh took over his position in 1983, he reduced the chain of command, placing confidence where he thinks it belongs — in his line managers.

"I wanted as few levels as possible between project managers and myself," Cavanagh says. "By pushing down decision making, things happen faster. The line managers have been developed and trained and are going to make the right decisions."

Cavanagh gives his employees leeway but within limits. "You are on your own as long as you know when to get back to him," Giordano says. "As long as you reach your goal, you don't have to do it his way."

But Cavanagh, it seems, expects no less from his line managers than he does from himself. "I send him a lot of things and he never lets them drop," Odell says. "He comes back promptly and has the ability to take complex issues and relate them in graspable terms."

> "HE ISN'T an information systems type who lives up in the clouds — he can see how this fits together."
>
> DONALD ODELL
> METROPOLITAN LIFE

Cavanagh has proved repeatedly that he gets things done, even in the most difficult circumstances. In 1973, when Metropolitan Life added casualty insurance to its offerings, Cavanagh was charged with providing the electronic support for the new business — a difficult task that was compounded by the clash of corporate cultures and the desire of the new division to maintain its autonomy.

"Dan assessed the situation quickly and under difficult circumstances," Giordano says. "He quickly recognized that we had to acquire a system from outside and didn't let the politics get in the way of meeting our goals and getting into business."

Those skills have netted Cavanagh special assignments from top executives. "His ability to work across department lines — with people who can be difficult — is one of his greatest qualities," Odell says.

Those abilities will serve Cavanagh in his next quest: to build the expertise and the cost advantages associated with both expert systems and imaging systems, two technologies he believes will lower response times and raise service levels. "Expert systems and imaging will dramatically change the online environment," he says. "I would like to see that platform in place before moving into something else."

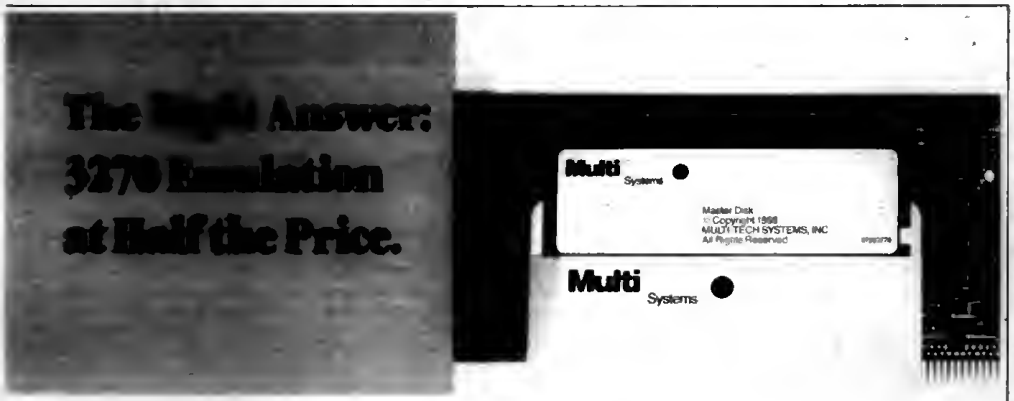
Too time

Cavanagh, 49, and his wife live in Brooklyn, N.Y., and both are avid golfers. His four children now live away from home. Two are in the computing business — a daughter who is a programmer/analyst and a son who is an IBM employee.

Cavanagh is aware that betting on a technology involves chance, change and the possibility of failure.

"We went out on a limb with a few projects," he says. "We thought, for example, interactive video would take off, and it hasn't."

There have been others, and Cavanagh said that he has learned from them and is undaunted by change. "We've changed several times," he says. "Every time we've changed, the company has gotten better for it. We've moved forward, and we shouldn't be afraid of it."



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TAKING CHARGE

Jeff Rochlin

A big MIStake

I once worked as a programmer/analyst at a modest-size company. It was a good shop to work in if you had a passion for what you did and an ability to police your own work. Management took a hands-off attitude in running the department.

At the time I came aboard, this policy worked fine because the tasks were challenging and plentiful. About 10 months later, after completing the outstanding major projects, the work ran out. It didn't take much time after that for the department to fall apart. Paradise lost!

I have found this problem to be a common one throughout most of my 10 years of experience in MIS. In most companies, the responsibility of MIS falls under the supervision of former programmer/analysts without any background in managing people. Often they have been rewarded for having done good work keeping the machines alive and then been promoted right out of what they do best. Frankly, they are usually not up to the task of running a computer shop.

I'm not talking about a lack of experience or knowledge. The simple truth is that computer people, generally speaking, make lousy managers. Computer people have egos the size of the great outdoors (myself included), and speaking from my experience as director of data processing at a small shop in New York, our egos make us impossible to manage.

It's an understandable phenomenon. Computers have revolutionized in a very short time the way the world functions. Techies are a part of that revolution, and it has been a real ego-boosting experience. The world cannot survive without computers, and computers cannot survive without programmer/analysts making them dance.

If management works effectively, slow periods in an MIS shop become highly productive. This is when the seeds of new ideas are nurtured — a time when the company gets to take advantage of creative minds without pressure of deadlines. People are free to brainstorm and build better systems.

But when management is ineffective, a period of stagnation results. The staff becomes bored and begins to look elsewhere for new challenges. Self-motivation doesn't create new work, but it serves as the fuel that gets the work done on time and within budget. It is the responsibility of management to create new work by assigning tasks and setting a course of action. Without direction, self-motivation dies.

Management is the art of delegating responsibility. With a staff of big egos, delegation can be a tricky prospect that requires an MIS director to be a salesperson, a technical genius and a diplomat. If he is doing it right, all ideas have value because brainstorming promotes a sense of contribution among the staff.

Back to my tale. After a few months of very damaging stagnation, the vice-president decided to hire a director of MIS to put the department back on track — a very sound business decision. The person they brought in fit the needs of the company from an MIS standpoint. He had some experience as a consultant and a knowledge of computer systems.

Unfortunately, he did nothing to encourage the sharing of ideas in the department. A self-confident man provides strength and leadership, but self-confidence with a closed mind is arrogance. It took him less than a week to alienate his already discouraged staff, creating a deeper rift in the department. Ultimately, a loyal and talented group of people moved on to other jobs.

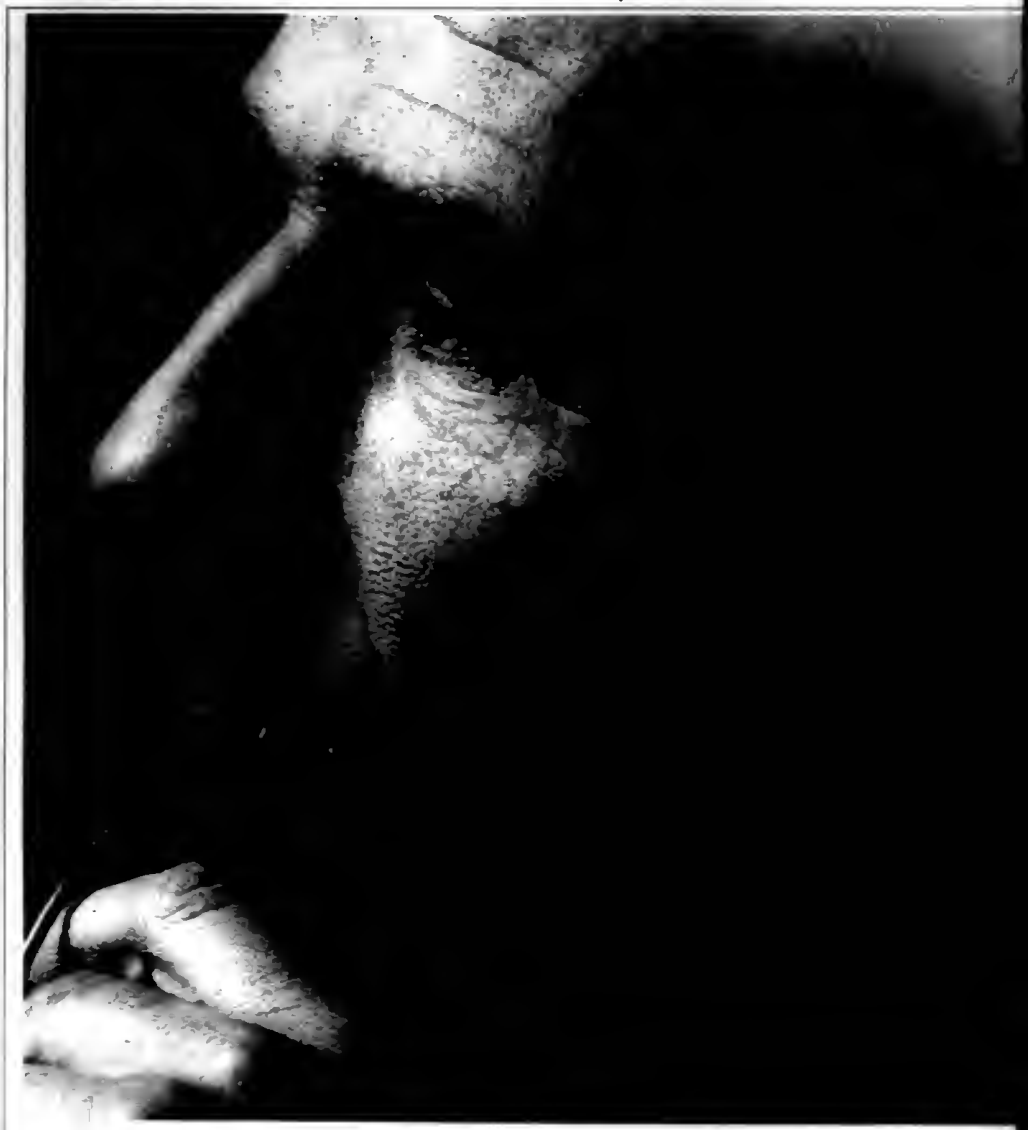
If there is a moral to the story, it is this: When hiring a manager for an MIS department, technical ability is not the most important skill to look for. Employees will spend more than 40 hours per week at their jobs, and most of them wind up taking the job home at night. Employees need a sense of value, belonging and purpose to have a feeling of self-worth. Without feeling part of a team, those 40 hours are long and hard to handle.

I'm no authority on how things are supposed to be, but I've watched some fine MIS centers dissolve because the people managing them can't seem to work as well with the employees as they do with the hardware.

We have to look more for the human qualities in our managers. Technical knowledge is an easy commodity to obtain: It comes with experience. Maybe it's time we started looking for managers who manage people as people and not as machines.

IT IS THE responsibility of management to create new work by assigning tasks and setting a course of action. Without direction, self-motivation dies.

Rochlin is an independent consultant currently working in the Los Angeles area.



CALENDAR

"The Intelligent Corporation" will be the focus of a two-day seminar June 5-6 in New York. The program, based on the book by Ruth Stanat, is targeted at chief information officers, chief executive officers, company presidents and strategic planners. Some topics include "Foreign Competitive Intelligence Tracking Systems," "How to Use and Get Strategic Information" and "Strategic Technologies of the '90s." Speakers will represent Eastman Kodak Co., AT&T, Bankers Trust, General Foods Corp., Digital Equipment Corp., Pitney Bowes and others. For more information, contact the Ruth Stanat Forum, Inc., Suite 1301, 404 Park Ave., South, New York, NY 10016.

MAY 28 - JUNE 3

Touche Ross Electronic Retailing Conference. Atlanta, May 30-June 1 — Contact: Teri Ehnihi, Touche Ross & Co., Northern California Practice, San Francisco, Calif. 94111.

Developing Managers in a Competitive Environment. Los Angeles, June 1-3 — Contact: Davidson Conference Center, University of Southern California, Continuing Studies Registration, Los Angeles, Calif. 90089.

International Summer Consumer Electronics Show. Chicago, June 3-6 — Contact: CES, Suite 200, 1722 Eye St., N.W., Washington, D.C. 20006.

JUNE 4 - 10

CIPA-MACI Joint Conference. Anaheim, Calif., June 4-5 — Contact: Pat Johnson, The National Society for Computer Applications in Engineering, Planning and Architecture, 5 Park Ave., Gaithersburg, Md. 20877.

IDI: Information Partnerships and Competitive Advantage III. Arlington, Va., June 4-6 — Contact: Phillips Publishing, 7811 Montrose Road, Potomac, Md. 20854.

Insurance Accounting and Systems Association. Toronto, June 4-7 — Contact: Elaine Powell, P.O. Box 61340, Durham, N.C. 27717.

Automated Government Benefit Symposium. Washington, D.C., June 5 — Contact: Ann Jeanne, American Bankers Association, 120 Connecticut Ave., N.W., Washington, D.C. 20036.

Northeast PROFS Users Group (NEPUG) Spring Meeting. Boston, June 5 — Contact: Hal Berussi, John Hancock Financial Services, T-16 Info Center, P.O. Box 111, Boston, Mass. 02117.

How To Write and Produce Effective User Documentation. Boston, June 5-6 — Contact: Suffolk University, School of Management, Center For Management Development, 8 Ashburton Place, Boston, Mass. 02108.

Data and Process Modeling '89. Arlington, Va., June 5-7 — Contact: Barnett Data Systems, 16 Orchard Way N., Rockville, Md. 20854.

Data Communications Concepts. New York, June 5-7 — Contact: Technology Transfer Institute, 741 Tenth St., Santa Monica, Calif. 90402.

On-Line Transaction Processing Symposium. Boston, June 6-7 — Contact: Digital Consulting, 6 Windsor St., Andover, Mass. 01810.

Personal Computing Conference: Implementing the User Workbench. Monterey, Calif., June 6-7 — Contact: Ashley Pearce, Gartner Group, P.O. Box 10212, Stamford, Conn. 06904.

A/E/C Systems '89 Computer and Management Show for the Design and Construction Industry. Anaheim, Calif., June 5-6 — Contact: A/E/C Systems '89, P.O. Box 11318, Newington, Conn. 06111.

AIM Show and Conference. San Francisco, June 5-8 — Contact: Association for Information and Image Management, Suite 1100, 1100 Wayne Ave., Silver Spring, Md. 20910.

Profiting From Mission-Critical Systems. Boston, June 6-7 — Contact: Business Research Group, 275 Washington St., Newton, Mass. 02158.

Trading Systems Technology Software Symposium. New York, June 6-7 — Contact: Waters Information Services, P.O. Box 2248, Binghamton, N.Y. 13902.

Computer-Aided Facility Management Conference. Anaheim, Calif., June 6-8 — Contact: International Facility Management Association, Suite 1410, 11 Greenway Plaza, Houston, Texas 77046.

Intelligent Mapping '89: A Conference on Computer Software and Hardware Used for Geographic Information Systems. Anaheim, Calif., June 6-8 — Contact: ADI Group, Suite 425, 11966 Bernardo Plaza Drive, San Diego, Calif. 92128.

Network Computing Forum. Ann Arbor, Mich., June 6-8 — Contact: NCF Headquarters, Suite 525, 101 N. Main St., Ann Arbor, Mich. 48104.

Computer Security Workshop. New York, June 6-9 — Contact: The International Association for Computer Systems Security, 6 Swarthmore Lane, Dix Hills, N.Y. 11746.

Impact of Information Technology on Financial and Information Systems Management. Bedford, Mass., June 7 — Contact: Society for Information Management, Boston Chapter, P.O. Box 116, Newton Lower Falls, Mass. 02162.

Society Of Manufacturing Engineers Educational Clinic. Los Angeles, June 7-8 — Contact: Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, Mich. 48121.

Systems 3X Expo. Marlboro, Mass., June 7-8 — Contact: Systems 3X Expo, 27 Congress St., Salem, Mass. 01970.

C Programming With Style & Discipline. Milwaukee, June 7-9 — Contact: John Y. Sneddon, University of Wisconsin-Milwaukee, Center for Continuing Engineering Education, 929 N. Sixth St., Milwaukee, Wis. 53203.

Hardware Resource Planning. Chicago, June 7-9 — Contact: The Institute for Information Management, P.O. Box 361506, Milpitas, Calif. 95035.

Small Computer Systems Conference. Monterey, Calif., June 7-9 — Contact: Gartner Group, P.O. Box 10212, 56 Top Gallant Road, Stamford, Conn. 06904.

CANEXPO '89: Canadian Software Products Exposition. Long Beach, Calif., June 8 — Contact: Andrew Chow, Team International, 3303 Manhattan Blvd., Manhattan Beach, Calif. 90266.

Electronic Data Interchange Conference. Washington, D.C., June 6-8 — Contact: Frost & Sullivan, 106 Fulton St., New York, N.Y. 10038.

Managing Technology As a Strategic Resource. Pasadena, Calif., June 8-9 — Contact: California Institute of Technology, Industrial Relations Center, 1-90, Pasadena, Calif. 91125.

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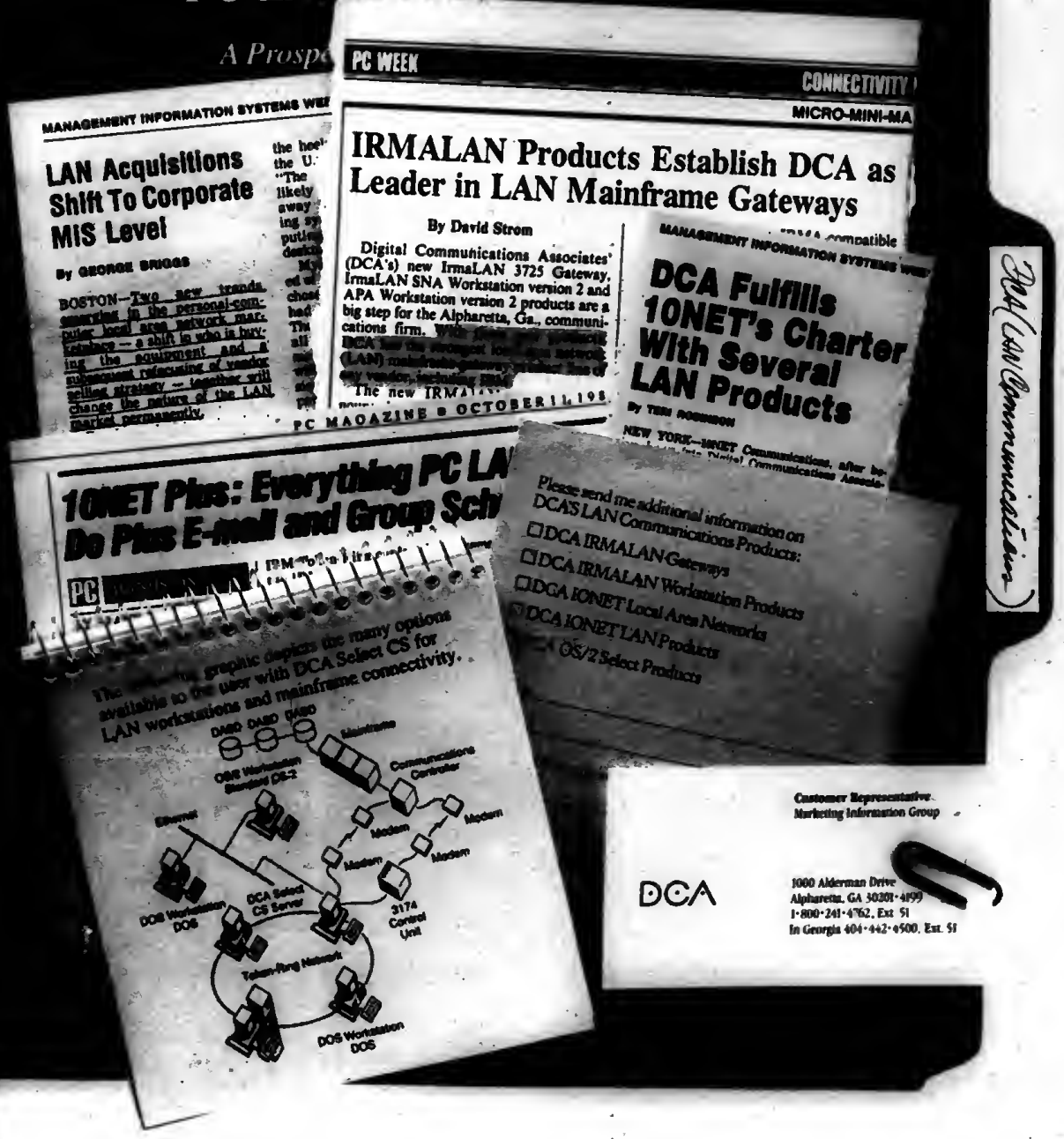

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Sharing the wealth: Data becomes community property

BY MICHAEL SULLIVAN-TRAINOR

By 1994, business executives starting work at Imperial Corporation of America (ICA) will face a challenging question: "How much application development do you want to do?"

Facing the need to develop unique products and services in the competitive financial services industry, Milton G. Wetzel, ICA's executive vice-president of the Information Systems Group, is planning to turn more systems initiation, design and programming over to the San Diego-based bank holding company's 25 business units.

"In five years, I see us giving the client as much of the development responsibility as he is willing to accept. We will provide the environment and the standards," Wetzel says.

To lay the groundwork for this strategy, Wetzel encourages ICA business managers to hire technical analysts with business experience from outside the company to work with MIS in identifying applications and assisting with design. He also offers executives a choice between building their own separate personal computer-based applications or working with MIS to implement new host-based systems.

By sharing application development responsibility, Wetzel is moving the creation of systems closer to those most knowledgeable about business requirements. He is also giving the business units a sense of ownership over their computing systems.

ICA's MIS staff still designs most of the business unit applications, working with the unit analysts to define requirements. But in the future, the central staff will leave a lot more of the development to the front-line analysts, in many cases, providing only guidance on standards and protocols.

Even though the strategy is only in the initial stages of implementation, there have been measurable efficiency gains. During the past three years, staffing in the MIS group has remained constant at 198, but 14 major applications have been installed and a conversion from DOS/VSE to MVS/XA has been completed.

ROBERT BORDOCK/GAMMA LIAISON

ICA's Wetzel *encourages dividing the responsibility for systems*

Structural shifts such as Wetzel's strategy broaden the definition of distributing resources. Once thought of as only expanded data access or distributed processing, distributing resources today means providing information systems support to users wherever they are and in whatever manner they need it.

Where and how users will require information support will change greatly as corporations advance into the 1990s. Many companies are anticipating a decade in which the pace of competition will set new records. New organizational structures will be required to allow them to operate in a more dynamic and entrepreneurial way. Companies will be looking to their information systems organizations to supply them with the appropriately configured information supply lines.

What is needed, according to the Lexington, Mass.-based consulting firm Nolan Norton & Co., is a new structure — one that allows knowledge and information to be manipulated, created, stored and communicated both rapidly and inexpensively. This structure, described by Richard L. Nolan, Alex Pollock and James P. Ware in a research paper titled "Creating the 21st Century Organization," will result in something they call a "network organization."

Distributing information resources in the broadest sense will be essential in this new organization. However, being prepared for the future is not the only factor driving MIS managers to distribute resources today. There are three major trends spurring business in this direction.

- What constitutes "need-to-know" information for business users is changing. Managers and workers at many levels in many departments now need the ability to manipulate and analyze data in diverse functions of the company and in remote locations.
- MIS is striving to develop the most cost-effective systems. Often this goal is best accomplished by running distributed applications on a PC network. The cost per million instructions per second on a central mainframe is about $200,000, while it is only about $4,000 on a PC.
- The availability of robust distribution technologies — database management systems and networks — is raising interest in nontraditional systems and applications in both the MIS and user camps.

Some experts speculate that these trends will lead control of systems away from MIS and toward users, ultimately disempowering MIS. But others argue that the more users become involved with systems acquisition and development, the more they will need MIS to link disparate systems and provide direction on standards and strategy.

While the experts argue these points, managers are basing their distribution decisions on other factors than simply who has control over what.

"There's no value in distributing for the sake of distributing," says Raymond S. Perry, vice-president of information services at Avon Products, Inc., in Rye, N.Y. "You make business decisions based on what pays off. While we're distributing for reasons of cost and high response, we're looking at centralizing some of the things that are in

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A different kind of customer handshake
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IS staffs begin journey of migration
Page 84

Sullivan-Trainor is *Computerworld*'s senior editor of special projects.

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FROM PREVIOUS PAGE

our branches now."

Nevertheless, as users acquire more and more functional technology, such as high-powered PCs and local-area networks, new expectations are raised about their part in information systems development and implementation.

"Whether MIS is responsible for it or not, information resources are being distributed, and enabling technology is playing an important role in driving it," says Bill Rosser, vice-president and director of industry services at Gartner Group, Inc.

E-mail delivers demand

With the advent of electronic mail, users recognized the power of instant communications throughout the company. This understanding blossomed into demand for networks to link file and communications servers, Rosser says. File servers allowed data to be shared in work groups, and communications servers allowed access and manipulation of corporate data using PC functionality. "The next stage is departmental and work group applications in PC-based systems," he predicts.

Applications at the departmental level trigger MIS involvement because of concerns about corporate security and compatibility.

On the corporate level, MIS managers are also concerned about distributing access to information generated by the company's total applications portfolio. They are designing cross-functional systems to meet this need. For example, many banks are designing systems that allow a clerk to view information about all of a customer's accounts even though that data is in numerous separate applications.

Corporate demands for cross-functional systems combined with sophisticated departmental users operating applications on disparate platforms will lead to platform-independent applications in the 1990s, Rosser contends. These applications will run on different-scale platforms from multiple vendors with common data structures.

For all the promise of the future, MIS currently lacks the technical resources to implement a truly distributed enterprisewide network of heterogeneous systems.

Current distribution systems are tenuous because there is little synchronization or coordination of data to guarantee accurate updates and changes to corporate databases.

Managers must design new systems architectures that incorporate departmental systems and corporatewide central and distributed systems. Their job will become easier with the advent of vendor-driven standards such as IBM's Systems Application Architecture (SAA) and Digital Equipment Corp.'s Applications Integration Architecture.

Eventually, interfaces will be available from vendors that connect disparate systems with the prevalent architectures such as SAA, but in the meantime, MIS must design tactical solutions that serve today's requirements.

"The array of new client-server models and data access applications will coexist with the old layer of central applications, and we will transition ourselves application by application to a new world of distributed resources," Rosser says.

Forming the basis of this transformation will be new structures within MIS and the departments it serves. But to get there, MIS has to overcome several problems.

For example, enlisting their own analysts was a significant cultural change for ICA's business units — one that took a great deal of relationship-building on the part of MIS.

"We had to change what users thought of as the data center and establish credibility as professionals," Wetzel reports.

MIS accomplished this task in about 12 months by successfully executing new high-visibility systems. The systems included a check processing center, a general ledger and financial accounting system and a human resource/payroll system. The efficient implementation of these systems established credibility for Wetzel's group.

That credibility made it easier for the business unit managers to feel comfortable about working in close partnership with MIS through unit-hired analysts.

"There are always people who are skeptical of change, even if it's favorable change," Wetzel says. "We had to show them that we were people who could be trusted to deliver what we said we would deliver."

Department managers were also attracted to the idea of increased input in the systems design process. "When we got here there wasn't anybody on the client side doing anything," he says. "If I was a client dissatisfied with MIS, I'd jump at the chance to have control over my own destiny."

Some of ICA's business units are still reluctant to move in the direction of autonomy. For the majority that have, however, Wetzel says the payoff has been the development of strategic applications that might never have materialized otherwise. For example, a loan-hedging module was added to the company's real estate applications to help manage customer investments.

"The hedging system may be the only one of its kind," Wetzel says. "And it would not have been created if we didn't have people in finance that were computer literate."

DEC doesn't worry

Unlike ICA, Digital Equipment Corp., the second largest systems vendor in the U.S., does not have to worry about whether people on the business side understand technology. In DEC's case, an internal resource distribution strategy has led to organizational changes of a different nature. The focus of information resource distribution at DEC is a data network of 35,000 systems in 33 countries. The network provides about 100,000 users with access to data, applications or processing power from any location worldwide.

Electronic mail and a host of other applications are available to users at 450 locations. Half the computers on the network are workstations or PCs, and the rest are nearly all medium- to large-scale DEC minicomputers — some configured in clusters — with a few Apple Computer, Inc. Macintoshes and couple of IBM Personal Computers, used for development only, thrown in.

"Every element of DEC runs over the network," says Peter Brown, manager of technology at Digital Information Systems. The most pervasive application is order processing, which is used by most of the company's business units — from manufacturing to sales and service. Company finances are managed worldwide across the network and rolled into single totals during reporting periods.

Although planning and testing began in the early 1970s, DEC's internal enterprisewide network did not come into being until 1982. Computer systems have been added to the network at a rate of 50% a year, and the company has gradually moved to replace paper memos with electric communications. The growth is moderating now as DEC's own growth slows, but applications will be added as required by business needs. Most of the new systems will be workstations and PCs.

The way network technology is applied is driven by DEC's organizational philosophy. "We have an organization that is aimed at building consensus among the employees and managers and the network enables that," Brown says.

This strategy has brought about changes within DEC, such as decentralized engineering. Hardware engineers develop CPUs in one location, software engineers design the operating systems in another, and direct-access storage device designers work elsewhere. The network ties these geographically dispersed work groups together in the creation of a single product. "The network is an integral part of the way this happens. It has changed the way people do their jobs," Brown explains.

Likewise, the network facilitates the simultaneous manufacture and introduction of products in Europe and the U.S. In the past, there was often as much as a six-month gap between product introductions in one country and those in another.

The network also allows the firm to employ technical experts

The challenges ahead

- MIS managers must develop architectures to bind distributed systems into a corporate network because standards such as IBM's Systems Application Architecture are still years away.
- To ease user concerns about organizational change caused by distributing resources, MIS managers must develop strong cooperative relationships with business executives.
- Traditional biases within MIS departments toward centralization must be overcome to implement distributed systems where they are the best solution.
- Workstation-level systems often lack the security and performance management functions of larger systems, forcing MIS managers to pay closer attention to those issues.
- Distributing access to corporate networks and databases to users outside the company raises serious questions of security and data ownership.

MICHAEL SULLIVAN-TRAINOR

Forces for change in IS structure

Information systems organizations are facing a time of major transformation, according to the consulting firm DMR Group, Inc. in Toronto. Many are already shedding their traditional orientation as service organizations and creating new identities as bottom-line, competitive entities. The objective is to find a structure that will allow IS to align itself with the needs of the enterprise and to be both more responsive to competitive and strategic pressures and more cost-effective in delivering solutions to the business.

DMR has identified several of the trends that are inexorably pushing IS executives in the direction of organizational restructuring. They include the following:

- Corporate management's resolve to establish information systems strategies that will address strategic and competitive issues, which is leading executives to investigate alternatives to the traditional centralized IS infrastructure.
- Increasing competitive pressure, which has prompted widespread downsizing and cutbacks across the organization and is forcing IS to consider the question of how to support the organization and deliver strategic systems with fewer resources.
- New technologies are creating the perception that decentralized IS strategies are not only more responsive but more cost-effective. Although there is evidence that decentralization makes management of the technology and the organization more complex, the appeal of perceived savings is strong.
- IS executives are faced with the need to balance business unit requirements for innovation and flexibility with enterprisewide requirements.
- IS organizations often suffer from an image problem and are viewed as technological fortresses inhabited by individuals who do not understand and are not responsive to business.
- End users, experienced with technology and confronted by competitors' use of strategic information systems, are pushing to acquire greater power and exert greater control over information systems.

where they are most numerous rather than relocate them. For example, communications engineers in Reading, England, are a core part of the company's communications division based in Littleton, Mass.

"We have a high degree of flexibility and responsiveness," says Bob McCauley, DEC's corporate telecommunications manager. "We have the ability to tailor the operation to the local environment while still managing and coordinating those resources to get a better utilization of them for the total company."

IBM's Ford

Because the network facilitates a very flexible structure, it is not a style suited for all corporate cultures, Brown says. "You need people who are comfortable in that environment and feel they can still retain the right degree of control and coordination. At DEC, that works very well, but in another organization you might not have the same amount of fluidity."

Technical challenges are the biggest obstacles for DEC's MIS. While the network allows distributed access, incorporating new technologies in such a complex structure is not easy. "How do you keep on top of the rate of technological change?" Brown asks. "How do you design an architecture that fits them all together?"

While searching for answers to these questions, DEC's MIS faces another problem — opening up the network to outside companies such as DEC's distributors, suppliers, customers and development partners. The obstacles to this change are both technical and cultural. Security and expanding worker's boundaries are the main areas of concern, according to Brown.

Like DEC, IBM's internal MIS is grappling with working with outside users, but its approach to internal distribution of resources is as different as a VAX is from an IBM 3090.

Rather than one network of minicomputers and microcomputers, IBM's strategy is to establish multiple database repositories of information using large systems. These repositories act as a warehouse for data drawn from all the applications used in the company's business units worldwide.

Central source for data

"We are busy building those kind of repositories so that when any user wants to get information, he doesn't have to know each of the MIS applications," says Larry Ford, vice-president of IBM's Information and Telecommunications Systems. "All he has to know is that there is a central warehouse where the data exists."

The challenge of this strategy is to design interfaces that enable users to access and manipulate the data at the workstation level. MIS must understand how that data can be put in accessible form for the various users. Making that happen across IBM's 120 MIS sites around the world requires a change in how IBM's systems personnel view their roles.

Special skills sought

"Our MIS organization has tended to be a builder of new applications," Ford says. "More and more to meet the internal needs, responsiveness is a higher priority. What we need is the kinds of skills and thinking that comes if you are a systems integrator."

One of the chief difficulties of working with workstation-level applications is that they do not meet traditional MIS standards, says Steve Grant, director of Corporate Technology Planning at American Express Co. in New York. Grant advocates the use of distributed imaging systems within American Express' diverse operating units in different businesses throughout the country.

USAA's Lasher

"You have to watch out for things you take for granted in a typical data processing organization," Grant says. "If you buy something for the host or minicomputer environment today, you get performance monitoring and tuning capabilities, transaction integrity and a whole host of things. In this newer technology, you have to be careful because these things are not considered," he explains.

Concerns about the difference between the large-systems environment and the PC or workstation level are causing managers to proceed cautiously with distribution plans.

For example, at United Services Automobile Association (USAA), a San Antonio, Texas-based insurance company, Donald R. Lasher, president of information services, plans to carry distributed access to data as far as he can, but he will not distribute the company's central DBMS.

"The complexity of breaking up the database and giving people pieces of it without it being tightly controlled scares the bejeepers out of me," Lasher says.

However, in 1995, USAA users will operate workstations running knowledge-based systems and accessing optical media. The company already operates an innovative companywide image processing application.

Customer service personnel will operate workstations that can access expert systems to help them offer financial services to policyholders. But they will only have access to the data they need to accomplish their applications. There will be a master database copy at a central site.

"No matter what the data element, there will only be one owner responsible for changing it and ensuring accuracy. That's the only way to keep things in sync, and it's bad enough doing it that way," Lasher says.

At Avon, central management of company information is also important. But Perry says he believes in moving the

Continued on page 76

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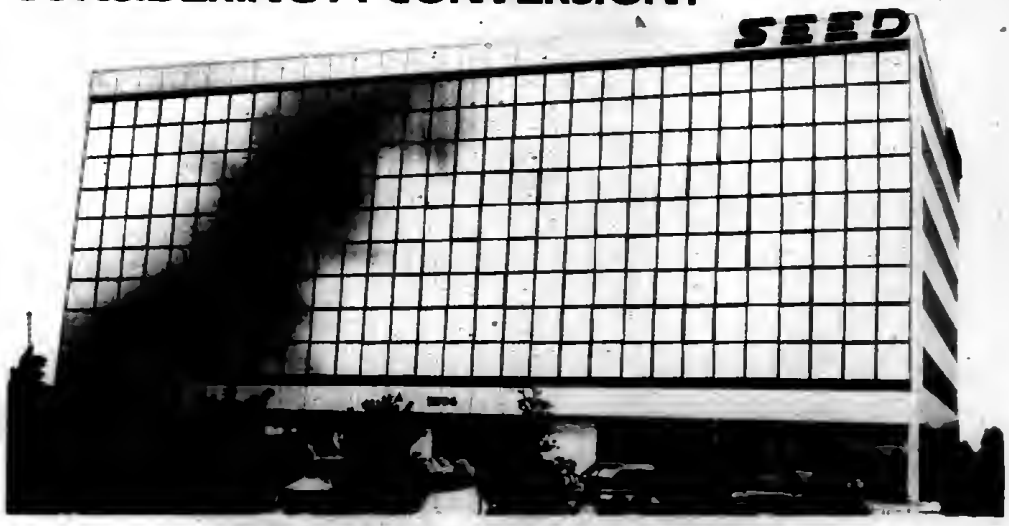

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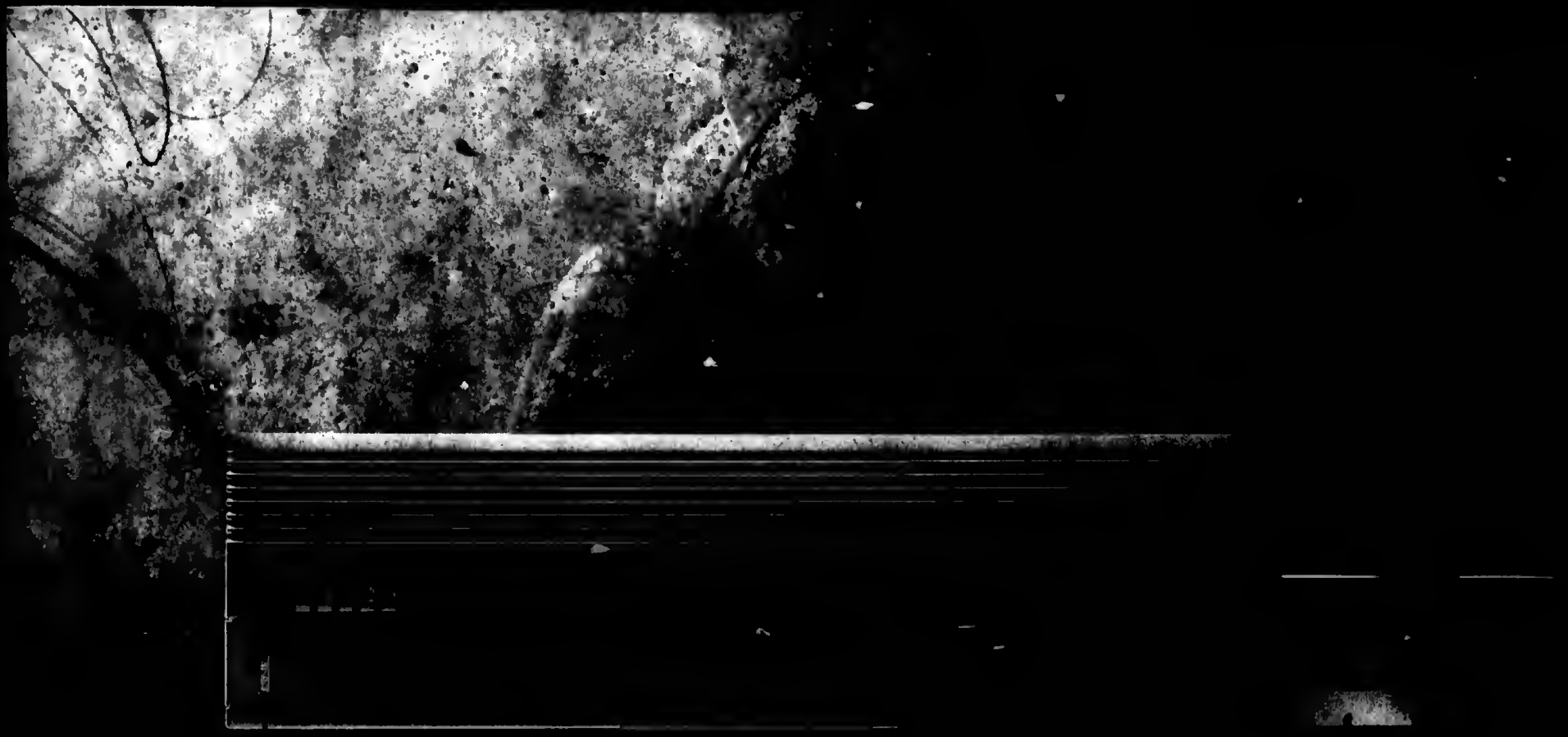

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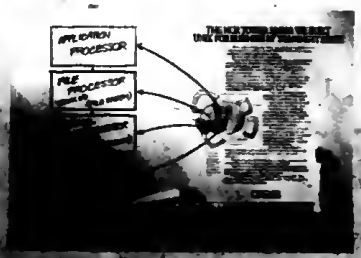

NCR

Sharing

CONTINUED FROM PAGE 73

processing out to distributed locations when that is more cost-effective.

Host systems at the company's headquarters process worldwide financial reporting, payroll and manufacturing control for four plants. The CPUs are connected via a T1 network to five automated distribution centers, which are run by their own groups of DEC VAXs and IBM mainframes. Automatic picking machines, optical devices and conveyor belts process 50,000 orders per day with almost no human intervention.

"We implemented information technology in distribution for reasons of throughput and expense savings," claims Thomas Weller, Avon's director of distribution development and support. "We need technology even more now to have flexibility and zero defects."

Perry says Avon's architecture is driven by business requirements, not popular trends within MIS. "The important thing to remember is that our business is to make money by selling cosmetics; we make the computers suit the situation."

Informatioo systems personnel at the distribution centers report to the business executives in charge of each site. But Perry retains functional responsibility for their activities. "I'm their godfather, just as Tom [Weller] is the godfather of the distribution people," Perry explains.

The diversity of MIS approaches to distributing resources make it hard for managers to learn from their peers.

Researchers are currently attempting to formulate theories about why certain strategies work. One such project is under way at MIT's Center for Coordination Science and Technology. The research is sponsored by Apple and other firms.

"We're asking if there are analogies between the ways people coordinate their actions and the ways computer processors can coordinate activities in a distributed network," says Professor Thomas W. Malone, director of the project.

While that work is under way, MIS managers will continue to go it alone, distributing resources based on their companies' needs, personal biases and the limitations of the available technology. •

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How will IS help?

We are on the brink of a new era in informatioo systems, according to the DMR Group, Inc. People throughout organizations are already using computers and communications systems for direct support in many of the aspects of their work. Computer systems are now extending outward to link enterprises with their suppliers, distributors and customers.

The next step will bring end users along to a point at which an integrated computer/communications system infrastructure will support all of an organization's internal and external information management needs.

As organizations move forward in the direction of integration, DMR suggests that they will divide the functional responsibilities of the information systems organization into four areas. These areas, as described in the firm's research report, "The Integration of Data, Text, Voice and Image," are as follows:

• **Overall responsibility for driving the strategic use of information technology, including setting corporate policy.** This function will be performed by a strategic management team — an Office-of-the-CIO-type group. Ideally, this team will be a small cohesive team with executive responsibility.

• **Implementation and operation of the integrated computer/communications system.** This utility-type function may be provided by the internal operations staff and/or by third parties such as facilities managers or systems integrators. Its services will be provided on a chargeback basis, and it will be operated as a competitive profit center.

• **The development role.** This function will become more distributed. User departments will take a lead in directing their own application system projects. Development services will be provided by internal and external resources, mainly on a contracted basis.

• **User consulting services.** These services will encompass a broad range of skills and activities and will be provided by a combination of internal and external resources.

To some extent, this function may be distributed into user areas, but more common requirements such as technology-tracking functions should be part of a central pool of resources.

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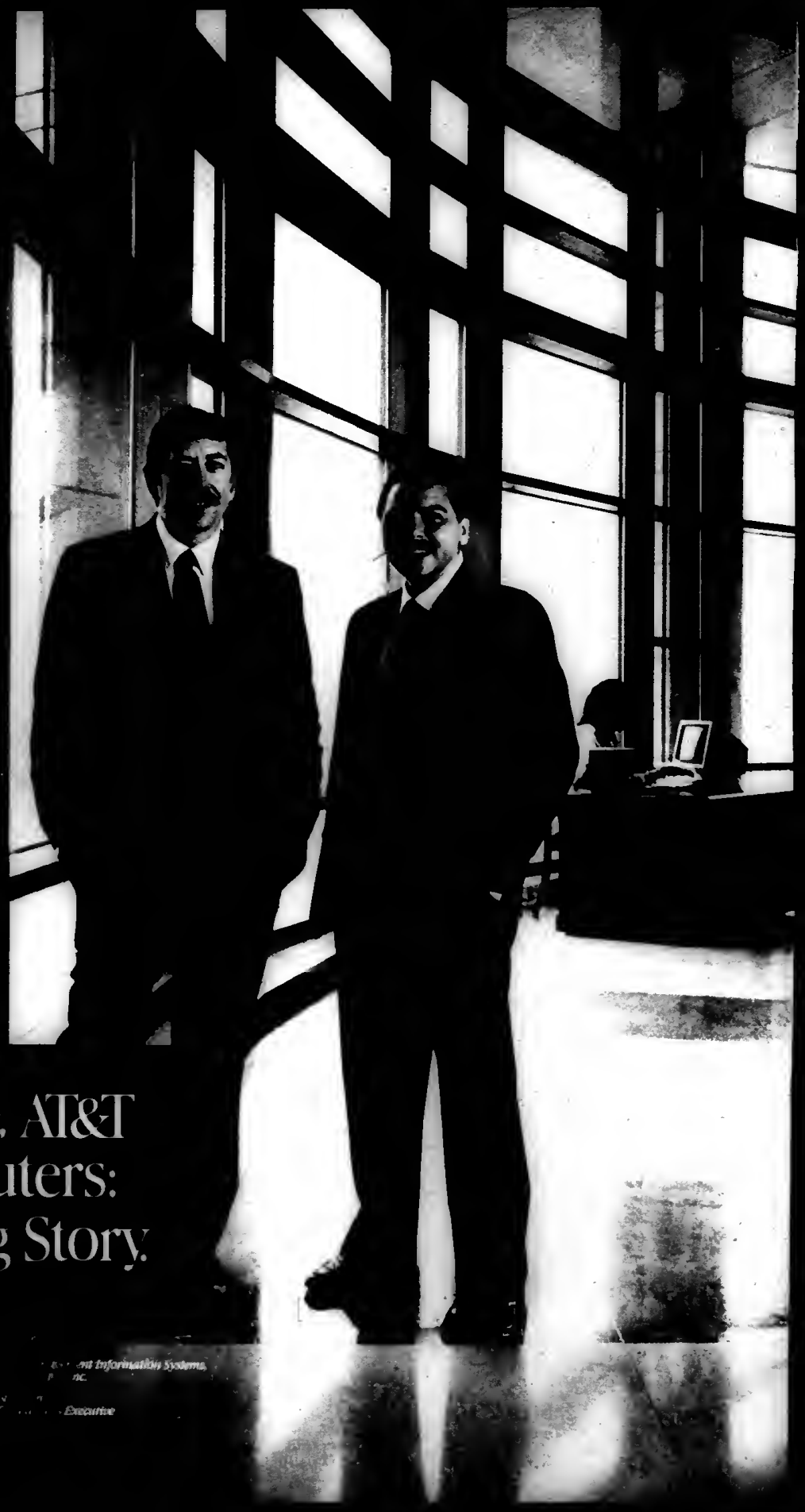

Allied &, AT&T Computers: A Moving Story.

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Chicago, Illinois
February 23, 1989

Recently, Allied® Van Lines tied their corporate computer systems into one fast, efficient, distributed computer network. Allied's Chuck Werner tells AT&T's Frank Mastro how AT&T's Distributed Network solution saved money for Allied and improved agent service.

Frank: You guys are pretty tough customers.

Chuck: (Laughs) You bet! There were a lot of frustrated folks here; some managers had to use six terminals to get complete answers about billing, tariffs, etc. We'd seen the power of distributed networked computing when you linked Purchasing's AT&T 3B2 computers to Accounting's IBM host. We wanted more, and we wanted it fast.

Frank: Many companies are trying to manage multi-vendor systems and applications, but yours were particularly complicated.

Chuck: Believe it or not, we were running accounting on the IBM 3090, claims insurance on the Qantel, tariffs on the DEC PDP, and claims checking on the Wang.

Frank: None of the computers could talk to each other. People really needed six terminals to answer some questions.

Chuck: We had to have true distributed processing, and AT&T was the proven choice. You have a technical edge with the Information Systems Network. Because ISN allows transparent access to *all* our different systems, we could replace six terminals with one AT&T 605.

Frank: Now a claim or bill is just a hot key away.

Chuck: Plus ISN saved us money when we moved to our new data center. We didn't have to rewrite applications; we just moved everything we already had, and plugged into the ISNs through voice wiring paths. No one believed it—true investment protection!

Frank: I'll never forget *that* weekend.

Chuck: We now respond to 95% of our agents' questions in three seconds. And we're seeing cost savings already. AT&T 605 terminals each cost less than six months' rent on the old IBM terminals. We'll save a half-million dollars in expenses this year alone.

Frank: Plus everything runs over AT&T fiber-optic cable and twisted-pair wiring in your new building, instead of coax; you saved there, too.

Chuck: Right. We're delighted distributed networking customers of AT&T. We've had 3B2 computers in the field for years, handling shipment registration and accounting for agents. Your solutions are elegant: that's why your RFP won this time, over five other vendors. You know how to make our agents happy, and when they're happy, we're happy.

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EXECUTIVE REPORT

Data sharing includes clients too

BY CARSON REED

More and more companies are extending the conception of information distribution to include customers. The question is, are the returns from this kind of effort sufficient to justify both the added investment and the possibility of reduced control? Despite real problems, the answer is yes.

In cases such as home shopping and home banking, personal computer linkup programs have had a cool reception. These programs are being brought more in line with customer needs by eliminating on-site dedicated systems in favor of third-party service providers and shared industry systems. There are other issues to allowing customers direct connections into a corporate system, says Stuart Lipoff,

Arthur D. Little's Lipoff

director of advanced electronic development at Arthur D. Little, Inc., a Cambridge, Mass.-based management consulting firm.

"Everyone is concerned about security, control, proprietariness and even uptime, since if you offer a service to your customers, you can't just go down for servicing any time you feel like it," he says.

Still, dedicated or nonshared systems proliferate in a number of industries, and the markets continue to expand for electronic data interchange (EDI).

One reason that corporations are willing to invest is competition. Mark Leary, director of communications research at International Data Corp., a Framingham, Mass.-based research firm, says most decisions to share information with customers or clients are prompted by the need to keep pace with the service offerings of competitors.

"Regardless of the expense or the effort involved, it's viewed as life-threatening in some industries if you don't have or aren't building toward this sort of ability," Leary says.

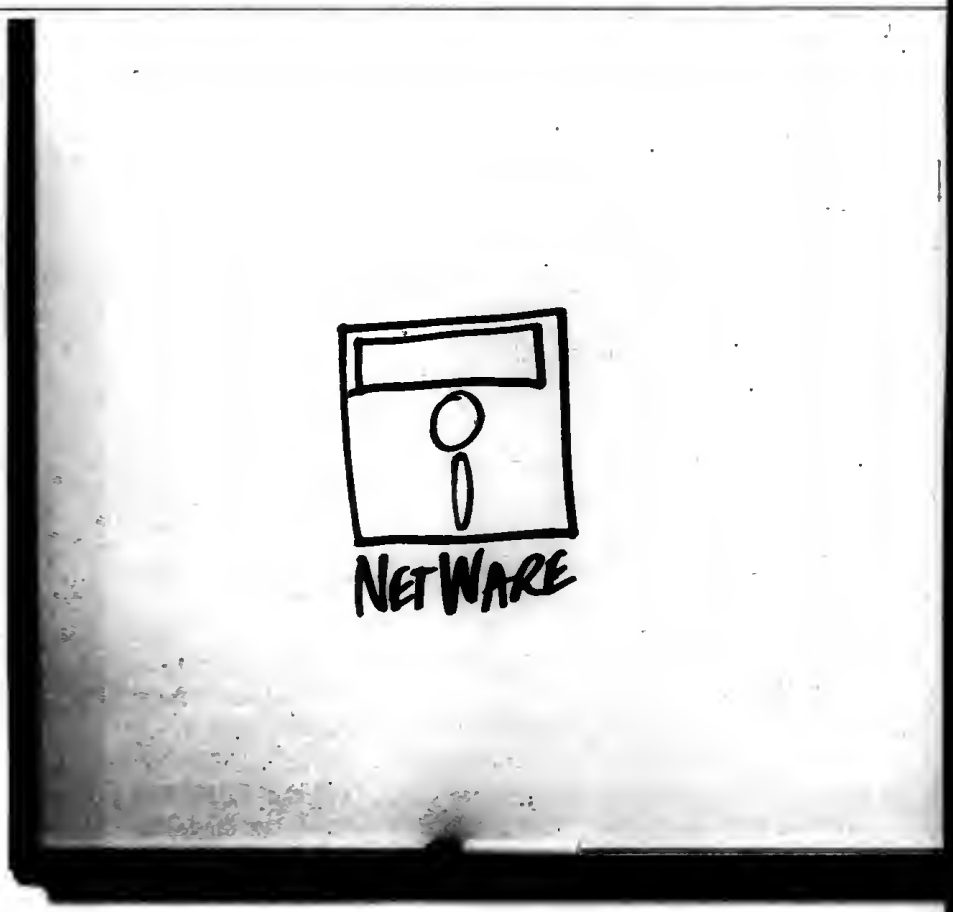
Executives at System One Corp., the MIS subsidiary of Texas Air, Continental and Eastern Airlines, examined the costs, benefits and disadvantages very carefully before setting up a computer program that provides travel information directly to travel agents and corporate travel departments.

"We look at information sharing in two different ways: What sort of revenue are we getting back to offset the costs of the services and what is the strategic value of having the sort of real-time information that's being added to our database by our own clients," says Doug Fogwell, senior director of marketing at System One's Chicago-based Airplan Services Group.

Airplan Services used to be known as Airplan Systems, Inc., which System One acquired in 1987 precisely because Airplan had already developed two systems that could provide direct travel information to agents. One program, Airplanner, helps travel agents schedule flights. A second program, Airauditor, is s software management program that examines what the travel agent has done in terms of those flight arrangements and explains how those arrangements could have been improved. Both programs are available for a fee to travel agents or a large corporation's travel department, and those fees cover most of System One's costs, Fogwell says.

Mark Ahlstrom, senior director of marketing at the Airplan division, says the strategic value

Reed is a free-lance writer based in Denver.



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of Airplanner — it helps travel agents provide the lowest airfare to their customers — is what prompted System One to offer information sharing.

At Great-West Life Assurance Co. in Englewood, Colo., the benefits of client connection are calculated in terms of shared responsibility for service quality. Great-West Life's Benlink system allows corporate policyholders to update employee insurance files using 64K-byte random-access memory PCs. This way, changes in status can be keyed in directly, rather than via mail.

Karl Berry, assistant manager of Benlink systems support, says that the effort and expense of running an interactive system is negligible even after development costs are considered.

"Our MCI WATS lines are by far the single biggest cost component, but connect time is passed directly back to the users," Berry says. Likewise, computer time amounts to almost nothing for both the provider and customer. "Our CPU time is factored in at whatever the CICS prime rate is, with an hour of customer time amounting to maybe a minute of CPU time. In theory, we're recovering all of our costs from users, with the added advantage that companies are providing us with a more immediate update of employee information and are keying it in themselves."

Great-West Life is now targeting its efforts more narrowly, attempting to back away from involvement in system leasing. Until now, the company has been leasing PC hardware to client companies that were interested in direct access. Now, however, Great-West Life is attempting to limit access to clients who are already equipped.

Whatever form it takes, information sharing is here to stay, says Richard Norris, practice leader for logistics at Arthur D. Little. He says EDI is particularly attractive because the sender is the person who is in control, not the receiver, which restricts access to the computer.

"The first step was to eliminate key entry," Norris says. "The second step is to manage inventory through quick order to cut lead time. The third step is sharing the data, which offers unimaginable possibilities of win-win situations." •

Silent sharing

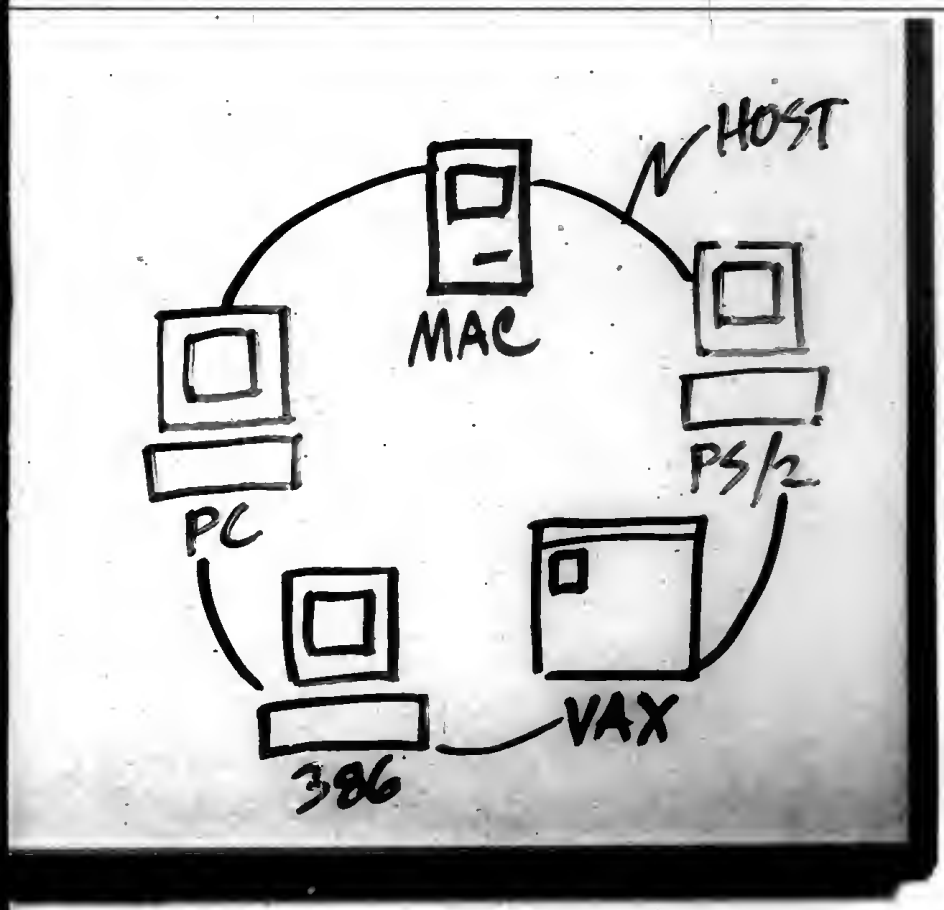
Most examples of distributed resources are visible to business users and in fact involve building a strong, cooperative partnership with them. But there are environments in which the distribution is accomplished without the user knowing the difference.

That is the case with a project being conducted by System One Corp., the MIS subsidiary of Texas Air, Continental and Eastern Airlines. A group of specialists within the MIS organization have been assigned the challenge of designing distributed PC LAN applications to serve travel agents nationwide. The project's goal is to run a flexible set of applications at a lower cost than might be found with a mainframe solution. Neither the users nor the primary MIS staff that maintains the System One host network are expected to feel the impact of the distributed system directly.

"We're really isolating ourselves from the rest of the network," says Mark Alstrom, director of application development for the project.

"We don't want to force the field people or the general group to have to do anything special. The fact that this service is running on an OS/2 network is quite invisible to the users."

MICHAEL L. SULLIVAN-TRAINOR



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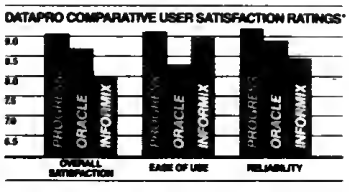

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INTERVIEW

When the walls come down

Proximity does not always produce partnership. Kay Lewis Redditt says that the way to achieve peer-level exchange between IS and business is to remove all the usual layers of insulation.

A couple of years ago, Kay Lewis Redditt and Thomas Lodahl began to pick up signals of a change in the structure of information systems organizations. Walls were coming down and information systems staffs were beginning to migrate into business units. Redditt and Lodahl, partners in Cognitech, an Easton, Conn., information systems consulting firm, proposed a study of the phenomenon to the Society for Information Management (SIM). The resulting report, based on research into the experiences of 20 SIM member corporations, was released in March 1988.

In the course of that research, Redditt and Lodahl coined two phrases that they feel will help to further the discussion: "alignment," which refers to the relationship that corporations are trying to achieve between their IS organizations and their business units, and "dispersion," which describes the movement of IS staff and resources into front-line posts within business departments.

Next month, they are planning to move into a second phase of discovery, digging into methods of dispersing IS resources and measuring the effectiveness of such efforts. This new research will be done in collaboration with the Toronto consulting firm DMR Group, Inc.

Redditt recently spoke with *Computerworld* Features Editor Joanne Kelleher about what the business alignment imperative means to the IS organization and how dispersion of information systems resources is likely to change the nature of IS management.

You make a distinction between decentralization and dispersal of information resources. Will you define the difference?

When you decentralize, you move IS personnel, but they basically still remain a group and they still serve a diverse user community. If you move a corporate IS group out into a regional location to serve all the business units in that area, for example, that is decentralization. Geographically they are decentralized, but organizationally it is still a centralized group.

Dispersal means moving one or more IS professionals out into a business area to serve one type of user. It also means moving away from the two kinds of mentalities that IS has exhibited in the past. Before, IS either owned everything and dictated what was going to be done and when or acted like a service bureau. Neither of those approaches work. There has to be a true partnership between IS and the business.

Isn't that rather a tough assignment for IS executives who have been operating on the basis of different assumptions for many years?

It is difficult. That's why a lot of companies have opted for this dispersion kind of alternative, where you literally transfer the IS person or group into the business setting and have them report to their business clients. That way, they have to merge their goals with the goals of the business, because if they don't, they aren't going to be successes as individuals.

Is it feasible to try for a middle ground? Could you, for example, retain direct reporting within information systems and keep the group intact but have them serve just one business unit?

Absolutely. This is a long continuum, and companies usually move down it slowly. Often they'll start by decentralizing a group of IS professionals, maybe putting them in a regional office. Then they'll begin to migrate out more deeply and spin off first one and then more subgroups to work with specific areas such as marketing or finance. Gradually, it gets deeper and deeper into the organization.

And what about the reporting structures?

Essentially what happens is that, at first, the groups that get deployed to business units report on a direct line back to IS. But gradually, the dotted and straight lines shift. From direct line to IS and dotted line to business manager, the setup changes to direct line to business manager and dotted line to IS.

Are business unit managers really all that anxious to have responsibility for information systems and IS personnel?

By and large, we've found that most business managers think they want it. They feel that this kind of control over their own destinies is becoming absolutely essential to success. The development cycles and everything else have speeded up so radically that they feel that they just can't wait for the traditional IS development cycles.

You said they *think* they want it. Do they often find that they really don't?

We have found that this is often a bigger bite than they thought it would be. Once they have IS people reporting to them, they find that they don't have the kind of management knowledge that it takes to manage these people and get the systems developed the way that they want. We had examples of business managers who, once they had IS people reporting to them, said "Here, take them back. I just can't deal with this."

What kind of problems could cause that sort of reaction?

In the new environment, the IS people often feel isolated from the kind of support systems that they had in a centralized organization. They also feel that their professional development paths are cut off. Then, too, business managers expect they'll get better systems out of this kind of organization, but the jury is still out as to whether or not that is true.

Is there a danger of taking dispersal of IS too far?

There can be successes all along the continuum — whatever works best for an organization. We did find from our research that total dispersal is very seldom the right solution because there are functions that need to be centralized.

Such as?

Standards, certainly. Also networking. In fact, any of the functions that have across-business-unit applicability really need to be centralized. If they aren't, you end up with chaos. We saw several companies that dispersed too much and then had to retrench and identify and bring back those functions that they wanted to recentralize.

Is it likely, then, that we will see the same sort of pendulum effect, in terms of dispersal, as with decentralization efforts?

It is certainly possible, but it is also totally avoidable. The pendulum swings back when you try to disperse too much, too fast. But dispersing is really a little like letting a genie out of a bottle. Once you move IS functionality into a local unit, you aren't ever

going to get it back completely.

Why is that?
What happens here, which doesn't happen in decentralization, is that the IS staffers become more diverse. They get molded into the organization and cross-pollinated, and job descriptions get fluid.

Are some firms more naturally suited to this kind of structure than others?
The overall culture of the organization makes a difference. The culture in which dispersion is easiest is one in which firms home-grow their own people. They hire generalists, usually directly from college, and grow their own people. It's part of their culture to move people around, so there is nothing unusual about individuals moving from one job to another.

You've talked about the kinds of firms for which dispersal is natural. How about the types that typically have trouble?
Companies that we found had problems in dispersing are those that were highly centralized and were reacting to the pressures for competitive advantage systems. Reorganizing in response to that kind of pressure can be very difficult for an organization that has been highly centralized.

Usually all of the career paths in such companies have been concentrated within very well-defined channels. Because professional development has always happened within specialized tracks and there has been little cross-pollination, IS people feel isolated and resign. Turnover among dispersed IS personnel in those kinds of organizations has been very high.

What is the role of the top IS executive in a dispersed situation, where most of his former staff now reports elsewhere?
I see it as critical. An analogy I like to draw is with the chief financial officer. Every enterprise has to have someone who worries, from the enterprise or company level, about the financial health of the organization. I believe that every enterprise organization must also have someone who worries about the information health of the organization.

Is that person likely to be the same one who is now managing the IS function?
We found that in those companies that were moving toward dispersing, the trend was to bring in a businessman into the top IS position to effect this kind of change. They feel that IS needs that kind of influence to get it focused on the business issues that the company is facing.

Does that mean top IS managers should be concerned that they are going to be moved out by business types?
It is clear that companies feel a business perspective is important. I think that the people filling that role now are kind of 50-50, coming from the business side and the IS side. What IS managers should read into this, I think, is that they have to develop the kind of business skills and business focus that is required.

And how should they go about acquiring that focus? Should they disperse themselves for a while?
Actually, a lot of companies are doing that. In fact, two of the top IS people that I interviewed in our study have already been moved out into a business job and are garnering experience out in the business.

They didn't see this as a demotion, did they?
Absolutely not. It was a promotion in both cases.

How many companies are really interested in pursuing some kind of strategy for distribution of information resources?
We found about one-third of the 20 companies we looked at were really doing something about this. And my assessment is that, since then, the issue has become even more important. I don't know how many more are actually moving in this direction, but a lot more recognize that they have to rethink their IS organization in order to position themselves for the 1990s.

Dispersion and decentralization weren't the only kinds of restructuring efforts that you found in your study group.
Some companies are trying to reorganize by setting IS up as an internal profit center. Others are trying to do a spin-off, where IS is not only an internal business but also contracts externally.

You've indicated that the results for that kind of an approach seem to have been mixed.
It does have some positive aspects in that, by running a business of their own, IS managers then begin to have a deeper understanding of their clientele. They begin to understand what marketing is, what profit motivation is. But the downside is that because the IS organization has to run its own business, it can't give its full attention to the IS function.

It would also seem that, by operating IS as a separate entity, you are moving in almost the exact reverse of the goal of tying IS more closely with the business.
Exactly. The major thing that most companies are trying to achieve with their alignment strategies is to break down all of the walls between IS and the business. And making IS a separate business doesn't really achieve that. ●

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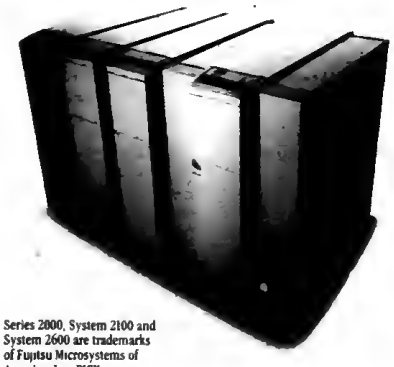

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Building today's hybrid systems development organizations

BY ROBERT O. PETERSON

Through the inherent instability of advancing technology and the dramatic changes in computing philosophy, the organization of the software systems development department has taken many and varied forms. Indeed, the life cycle of the typical systems development organizational chart is significantly shorter than that of the systems those organizations produce.

Technology continues to advance, shifting development emphasis back and forth between the end user and the professional developer. Because the boundaries of those responsibilities remain in debate, it is difficult to predict, and therefore organize for, the final picture. There are, however, a number of critical factors that should be considered whenever any organization is either formed or changed.

Before considering these factors, note that the manner in which they are impressed upon the organization varies primarily with the organization's structure. Any structure inherited by the systems development manager should not be cavalierly changed without being understood — look carefully, for example, at the factors that drove its formation. While descriptions abound, most organization structures represent hybrids between two ends of the spectrum: business alignment and functional alignment.

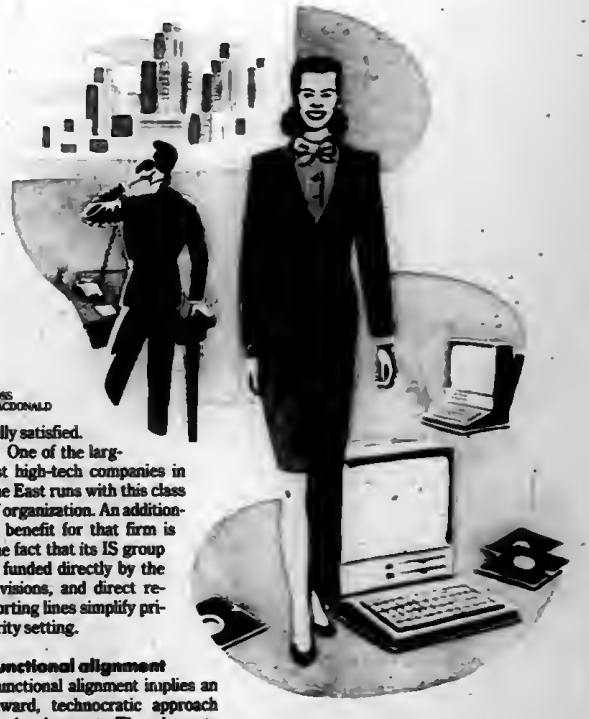
Peterson is an IS consultant based in Cary, N.C. His book, *Managing the Systems Development Function*, was published in 1987 by Van Nostrand Reinhold. He is currently working on an information systems planning book for McGraw-Hill.

When a development organization is aligned to the business side, it is generally reflected by broad application sets, which typically serve those departments that are functional to the business: finance, manufacturing, marketing and so forth. The subsetted areas tend to be, within limits, self-sufficient with analytical, programming and whatever other resources are necessary to service their application sets.

Business alignment is the more common organizational structure for several reasons. First, its rationale is obvious to all members of the company, especially to user management. This ensures a simple working relationship with the user community in which tacit approval is essential to the organization's continued survival.

Second, it is very easy to manage. Resource levels are directly aligned and defined so project loading becomes a simple matter of matching people to a priority list until the man-hours are exhausted. Testing one function's justification and importance against another's is not an issue.

Third, it allows protective expertise to develop. People within systems development are able to attune themselves so intimately to the business area that it becomes difficult to fool them. This may seem counterproductive, even confrontational, but today, with most users being computer-literate, it is pragmatically essential. The systems development department's principal measure, in this alignment, will be a business-line manager's evaluation of the developer's knowledge of that function, not necessarily the technical knowledge of developing systems. For development to remain viable, that evaluation criteria must be fully satisfied.



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One of the largest high-tech companies in the East runs with this class of organization. An additional benefit for that firm is the fact that its IS group is funded directly by the divisions, and direct reporting lines simplify priority setting.

Functional alignment

Functional alignment implies an inward, technocratic approach to development. The elements of a department with this type of orientation include a programming group, an analyst group and any number of ancillary support structures. While simplistic in view, this effectively describes the structure being sought — an organization that supports the function of developing systems.

In recent years, this class of organizational structure has fallen somewhat out of vogue. There are a number of reasons for this decline, but the predominant one is the desire to align the development activity with the business. Because the most obvious way to accomplish this task is to match organizational units of the company, upper executives favor a swing more to the business alignment end of the spectrum.

However, there are two extremely strong factors favoring functional alignment. First, systems development is a very specialized discipline. For its activities to achieve a decent level of efficiency, the benefits to its internal operation must be maximized. This means that technocracy must have a major bearing on organizational priorities.

Second, despite the emphasis

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given to the concept of the business analyst, the career transition from programmer to analyst is, in most cases, a fairly effective path. Programmer skills include a stringent focus, mental discipline and a breadth of technical expertise. These particular skills are invaluable to a systems analyst. Other career paths may be acceptable, but there is nothing inherently negative about starting as a programmer and moving to analysis. A functional orientation supports this very effectively.

A major manufacturer in the Southeast operates within a functional alignment and has found that concentrating on the technical issues has increased productivity substantially over its previous business alignment. Analysts work in user areas and generate either specifications or prototype models for the design/programming staff. The analysts and designers then deliver the product in concert.

Hybrid structure

Most organizational structures fall between a purely business and a purely functional alignment. Because every enterprise is different, there should always be some level of variation endemic to the enterprise. Some of the variations may be small, some dramatic, but there should always be something that uniquely defines the organization.

Yet some managers take individuality too far and concentrate exclusively on the characteristics they feel are unique to their situation. That orientation tends to automatically eliminate a number of relatively classical solutions. The desire to establish something new and revolutionary overcomes the more rational approach of examining what is common and adapting it to each situation.

Determining the priorities of the business generally points to the proper end of the spectrum of organizational structure. A company that sees its business functions as operating in near isolation will need a development group oriented toward application and business functions. Conversely, a company that sees these boundaries blurred and integrated will lean toward the functional alignment.

Other factors will enter into the equation, but they will generally tend to adjust the structure according to the position established by the business characteristics. Analyzing the business will be by far the single most important factor.

One successful example of a hybrid structure occurs at a national manufacturing firm. All internal activities, including programming and systems design, are organized for purely functional advantage. There are, however, several analysis groups aligned and funded along business lines. While some prioritizing problems continue to come up, the structure has been intact for nearly seven years.

Whatever the systems development department's structure, it is crucial to know what you do as an organization and as a company when establishing an organizational plan. While this seems self-explanatory — systems development develops systems and ABC Co. sells widgets — it isn't always that simple.

First, the orientation of the firm is extremely important. A company that deals with government contracts must concern itself with written, approved procedures and auditable quality control. The systems development department must be sensitive to this characteristic, regardless of how removed it may be from the product or service being contracted.

THESE PARTICULAR SKILLS are invaluable to a systems analyst. Other career paths may be acceptable, but there is nothing inherently negative about starting as a programmer and moving to analysis.

Similarly, a firm that deals with a highly competitive product must concern itself with customer service. Any contribution systems development can make, from formatting customer order tapes to providing customer access information systems, may make the difference in landing a customer or not. In any case, IS divisions and their development groups must absolutely understand the thrust of the business as well as their opportunities to contribute to it.

As important as systems development's place in the business role is its thorough understanding of precisely what it does. If the primary thrust is supporting end-user development via fourth-generation tools, isolating the organization from the user community would be a mistake.

When dealing with a predominantly packaged software environment, application analysis skills are needed more than conventional programming expertise. For firms that develop their own software using conventional languages and requiring stringent quality control, an organization that emphasizes a more functional alignment is more appropriate.

Organizational upheaval is always difficult, even when the changes cure a number of ills — indeed, in most cases, that is the motivating factor. Unfortunately, change can negatively affect a number of positive facets of an organization as well.

When establishing a systems development organization, keep an eye on its stability. Many factors may cause additional change and confusion, but it should not be caused explicitly by the organizational

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structure itself. When base-line stability does not exist, it is typically because the structure was established in response to situational pressures.

The most obvious example of this scenario is the establishment of a department that is really a project. The new department will invariably possess all the components that exist within the systems development department itself. The project is stand-alone. Because most projects eventually end, mass disruption is the final result, as the project/department is melded back into the real world.

Avoid this level of instability at all costs, because projects of intense importance and visibility will periodically take place. The frequency and length of those events is one factor involved in knowing what it is you do. Project orientation can be dealt with by organizational structure, but only if it is considered in the first place and only when inherent stability is a high criteria in establishing that structure. If the organization's structure — not necessarily its population — cannot be projected consistently through several years, it is probably not a good one.

Fine while it lasted

One company experienced this problem during a conversion effort that spanned a two-year period. The functionally self-sufficient project/department operated quite effectively until the project ended. IS management then found that seniority levels, management layers and procedures were replicated. It took a slowed economy and resignations to resolve the issues.

Common sense is often ignored when establishing a systems development department. A well-intentioned effort toward a classic structure or stressing the opportunity to use new and sophisticated tools has led many IS managers to severely cripple a systems development project. Things that look very good on paper can be very bad in execution.

The most common mistake is to totally ignore size when the department is established. Structured disciplines, for example, when implemented formally, require a substantial number of programmers to make them work. It does little good to have the same five people reviewing each program that has been developed. However, formal structured disciplines have been the driving force in many reorganizations of departments with fewer than five programmers. Common sense says it just will not work.

Equally dangerous is establishing an organizational structure without adequate skills to populate it. Obviously, a five-person database administration group will accomplish very little if it has virtually no experience, but sending all five off to a set of classes does little good either. All too often the desire or need to move forward with an organization results in a giant, irrecoverable step back. This situation occurred with an East Coast firm. It went through three database management systems before its staff caught up with the technology.

Without a doubt, the quality and dedication of the people within any organization will determine its strength. To some extent, an organizational structure can simply be considered a way to provide the best people with the opportunity to do their best work. Notwithstanding these principles, the structuring of a systems development organization must go beyond people.

PEOPLE DO move, and departments without the strength to withstand this cannot hope to function effectively. Each change completely reshuffles the structure, increasing discomfort among the people in the department.

There must be real stand-alone strength in how the manager sets up the department. The acid test for this factor is whether the department could function if the names were taken out of the organization chart or if they were swapped around. It does not need to function as well, but it should be able to function.

Organizations that do not have stand-alone strength cannot stand much flux. People do move, and departments without the strength to withstand this movement cannot hope to function effectively over time. Each change in key individuals will completely reshuffle the structure, possibly increasing discomfort among the people in the department.

Evolution

An effective organizational structure takes into account the need for the systems development group to evolve in synch with company needs. This, of course, presumes some knowledge of where the company is moving, but that is not a luxury every systems development manager has. Additionally, the future can only be a vague picture of direction. Given the dramatic upheavals and direction changes common in business today, concrete assessments are really only valid in the short term. But this volatility does not imply that the manager is helpless.

The IS manager must constantly be assessing the directions of company policy to determine the potential impact on the development area. A movement of support and administrative functions from the central to remote locations implies an eventual need to structure aspects of systems development around those remote

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* The Wall Street Journal (1987) - "Survey of the Information Processing Marketplace".
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facilities. It may not mean relocation, but, at the least, it will require enhancing the techniques for distributed development.

The development manager can reasonably be expected to create a model of the department and the company and to evaluate changes to those models. The only problem with this approach is the enhancement of isolated skill levels that may turn out to be unnecessary. However, being caught with a need to change in a compressed time frame is far more severe than excess knowledge.

Flexibility

Computer system dependency has become so prevalent in today's business environment that any substantial change in the business places a heavy demand on systems production. Either entirely new systems or such tremendous levels of enhancements are required that projects tend to spring up overnight with corresponding demands for human resources. When flexibility is not considered in the organization, this ebb and flow of demand can be devastating.

A Texas-based company that expands by acquisition has solved this problem by having product-line specialists as an integral part of the systems development group. As the new firm is absorbed into the parent company, the developers are likewise assimilated until only a few remain tied to the product line.

Building flexibility into the organization is largely dependent on where in the structure spectrum it lies. Functional organizations tend to find their flexibility more obvious because the grouping of skills is consolidated around internal issues. Programming talent can be shifted from project to project or application to application with relative ease.

In a business alignment, the absolute numbers of programmers or analysts devoted to one particular application tends to be thinner, and moving from one area to another can open any number of side issues, not the least of which is different managers and philosophies.

The problems with this type of resource shuffling can be solved by using contract personnel, co-op students or a pool of nonaligned empoyees — that is, staff yet to be assigned to a specific area within IS.

A communications company in the Southeast added flexibility with a combination of organization, creative personnel usage and computer-aided software engineering tool implementation. Its systems development group has nearly reached the point at which it creates and supports systems in total response to business prioritization.

Technology sensitivity

Systems development organizations, for years, have been accused of being too technical. The response, since many development managers enjoy being paid, has been to project a more nontechnical orientation. However, the bottom line is that the development of computer systems is predominantly a technical exercise carried out by technicians.

Organizationally, the IS manager must ensure that the department remains sensitive to the impacts of technology. There should be an individual or group evaluating technology changes to see what potential benefit exists for the company and how effectively it may be implemented. Often, this responsibility is found in an independent planning group, but development managers must make certain that all of their prospects are being addressed.

Beyond evaluation and study, the principal vehicle the manager possesses to remain sensitive to technology issues is in project loading: for each project, devote only the personnel needed by determining early on the man-hours that will be required. Then you can free up some staff for research. Holding a reserve for internal new product study and assigning analysts to this task between projects works very well to keep the department abreast of new and emerging technologies.

Political pragmatism

The realities of corporate life insinuate themselves into organizational issues such that political pragmatism is often far more critical than any other factor in building a systems development organization. The manager who ignores politics or tilts at political windmills is doing little to benefit the organization or the people within it. The politics of the company and the people who drive it must be taken into account or else failure is inevitable.

Sensitivity to political issues can result in establishing a relatively independent group to service a strong, influential user community or absolutely avoiding a structure that has a negative connotation. In any case, try maintaining a constant flux of slow change instead of allowing it to occur abruptly and visibly. Moving in this fashion instills a sense of confidence in the department and allows the manager to accomplish the goals over time.

Organizations can be viewed simply as a stratification of people for optimization of their job performance. However, most people view the structure of an organization as implying direction to their working lives and the career ladder they must climb. Its proper structuring can make the difference between the success and failure of a department, regardless of how good the people are.

Constant change or absolute stagnation of that structure will inevitably drive people away and retard the ability of the company to grow through effective information usage. The successful manager is sensitive to the organic nature of the systems development department's structure and uses it as a means to accomplish the goals of the corporation. ●

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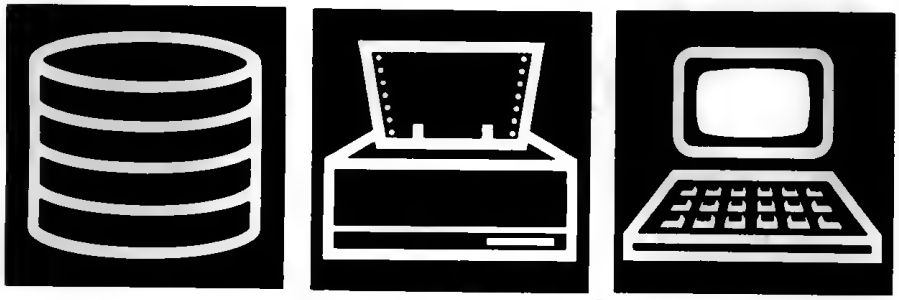

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INDUSTRY INSIGHT

Charles Varga

Productivity: Take your best guess

To all of us who read the daily financial press or run in the circles on which it reports, May delivers not only the rites of spring but also the rites of new statistics.

This month's harvest tells us that although productivity and productivity growth have increased slightly in the manufacturing sector, productivity growth has remained stagnant in the business services sector, in which 70% to 80% of all Americans are employed.

Oh, really? How can anyone tell?

Bruce McAdam, from the U.S. Department of Commerce International Trade Administration, pointed to growth across the board in the country's services sector, particularly in several areas touched by the computing and information processing fields. However, McAdam also noted that the lack of adequate data on sources and growth precluded a discussion of productivity in these self-same growth areas.

Not everyone is so deterred.

Many experts have said that we are living in a world of paradox, characterized by advancing technological changes. Some experts have said that the process by which new technology is assimilated, increased and updated into industry is petering out in the U.S. They also see a sharp decline in the growth of productivity, especially in the services sector.

Within the data and information processing areas, Nobel laureate economist Robert Solo recently commented that computer capacity, including

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Video power boost

Game pioneer targets corporate programming

BY J. A. SAVAGE
CW STAFF

MOUNTAIN VIEW, Calif. — Playing video games started Steve Mayer thinking that with high-quality video graphics, computers could deliver better entertainment than television.

Back in 1976, Mayer, one of the founders of Atari Corp., saw that technology did not allow high-quality video and interactive video simultaneously.

What Mayer has done with his latest start-up, Digital F/X, Inc., is find the way to integrate the two, posing the company at the starting gate for high-definition television (HDTV) and on top of the digitized video post-production market.

"The company is at the intersection of computers, video and electronic typography," said Mayer, who is Digital F/X's chairman.

With one setup — monitor, two keyboards, sketch pad and minicomputer — the DF/X 200 replaces a production room littered with specialized machines for animation, editing and special effects.

Puttin' on the glitz

While an extremely specialized and expensive product — the typical price is about $140,000 — the DF/X 200 fits neatly into the burgeoning corporate video market and in television for generating animation and special effects to glitz up standard programs.

It can replace diverse systems in a post-production environment costing five times that much, according to Richard Shaffer, president of New York-based market research firm Technologic Partners.

"More money is being spent on corporate programming than TV. Corporations want a good signal; otherwise, employees will be turned off," said Daniel Roberts, Digital F/X's vice-president of sales. "Corporate programming is more challenging than entertainment."

Digital F/X's Mayer *doesn't stop at video graphics*

For corporate video, Digital F/X claims its product can bring down costs while preserving quality. "Corporations don't have the budgets that are used for a national beer commercial," Mayer said.

However, the largest potential market is in television, according to Roberts.

Mayer is quick to point out that his product is not HDTV — at least not yet.

"It's beyond current broadcast quality, but there are no standards for what HDTV is," Mayer said.

Ready to adapt

In other words, if there were broadcast standards and televisions available to receive higher quality transmissions, Digital F/X's technology would be ready to adapt to that. If something other than HDTV develops for the U.S. market, Digital F/X has a likely technology for exploitation.

Shaffer thinks that U.S. companies will use digitized video, like that of Digital F/X's, to produce HDTV instead of the Japanese technology of speeded-up and compressed-analog transmission. This could be accomplished by direct transmission through fiber-optic cables to each home.

Digitized video, which relies more on software expertise than

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Adapso addresses identity crisis

BY NELL MARGOLIS
CW STAFF

SAN DIEGO — The 800-plus conferees came for seminars, speeches and schmoozing. But for Adapso board members, the software and services industry association's 70th management conference, held here last week, had a hidden agenda: to make headway toward resolving an identity crisis that has resulted in disaffection, defections and dollar drain.

The conferees, by most accounts, got what they came for. So, according to Adapso Chairman Lawrence Welke, did the board.

So far this year, Adapso has lost $215,000 because of resignations, prominently including those of Lotus Development Corp. and Control Data Corp.; last year at this time, the corresponding figure was $6,000.

Ranking leaders and members attributed Adapso's bleeding roster to its failure to keep pace with its constituents' changing needs. In particular, according to numerous conference attendees, Adapso has been slow in recognizing — and a no-show in addressing — the requirements of the burgeoning desktop software community.

And so they go . . .

Consequently, many of the members who have left or bypassed Adapso have cast their lots with the Software Publishing Association (SPA). Washington, D.C.-based SPA is known for its advocacy stance on the software piracy issues currently close to the hearts of PC- and workstation-related software firms.

"It is absolutely critical that we move from being member-driven and member-run to being member-driven and staff-run," Welke said. The change, he pointed out, will enable Adapso to add both breadth and depth to its industry representation.

The board agreed and adopted a slate of initiatives and strengthened resolves aimed at translating words into deeds:

- The heavily issues-oriented Software Industry Section will be getting its own executive director-level post — a move that Welke said should give Adapso the ability to offer PC and workstation companies the kind of targeted representation they are currently seeking at the hands of the SPA.
- An already aggressive program aimed at wooing entrepreneurial companies will be strengthened even further.
- Adapso will be going local. Exactly what form the grass-roots efforts will take has yet to be decided. What is definite, Welke said, is that it will happen, and soon.

"If we want to represent smaller and newer companies," he said, "we can't expect their heads to be able to take off three days from work and travel across the country to come to us. We have to take Adapso to them."

- In a similar vein, what some members complain is a stiff Adapso membership fee scale — currently set at $550 to $70,000 per year and based on a company's software sales in the preceding year — is under review.

Also under consideration is a merger with the Information Industry Association, with whom last week's conference was co-hosted. However, the board agreed to further consider a draft merger prospectus. Welke's vocal enthusiasm notwithstanding, a majority of Adapso members and observers interviewed last week believed that corporate cultural differences and love of turf will restrict the relationship to joint activities short of marriage.

MIT flunks U.S. firms

A two-year study conducted by 16 top-ranked MIT faculty scientists, engineers and economists assessed corporate America on grounds of productivity and competitiveness and gave the country a failing grade in each.

The 344-page MIT report, released this month, is titled "Made in America." The report cites massive defaults in basic education, entrenched lack of vision in the corporate front office and misplaced priorities across the industrial board as underlying a business culture that has grown outmoded and ineffective. The cross-disciplinary MIT commission targeted eight U.S. industries, including semiconductors and computers, and concluded that the hearts and minds of U.S. workers and managers are trapped back in an American industrial golden age, where the only new thought to get through has been the current — and insidious — obsession with quarterly profits.

Michael L. Dertouzos, who heads MIT's computer science laboratory, pointed to Perkin-Elmer Corp. and Control Data Corp.'s ETA Systems division as operations that, in opting for short-term profits over long-term planning, were good for the computer industry but bad for the country in the long run.

A drastic retooling of how the U.S. thinks about business will be necessary if the country hopes to compete in the international economy, the report concluded.

Graphics firm sprang from blackboard jungle

BY JULIE PITTA
SPECIAL TO CW

BERKELEY, Calif. — As a professor of computer science and electrical engineering at the University of California at Berkeley during the 1970s, Herb Baskin's only prop during lectures was chalk and a blackboard.

It struck him that there had to be a better way. "Overhead projectors and transparencies were state-of-the-art technology," Baskin remembers. Typically, each department had a couple of overhead projectors that were shared by faculty. If they were in use, it was back to the chalkboard.

Baskin was not a typical academician. Before embarking on a teaching career, he had spent 13 years at IBM, where he was director of systems research, and another few years at Datapoint Corp. At the latter, he led a team that developed a color graphics system designed for business presentations.

After 11 years of university life, Baskin was ready to return to industry. In 1981, he started General Parametrics Corp., bringing along a UC graduate student who had specialized in computer graphics. He funded the company with $150,000 of his own money.

Apple blossom time

It was the beginning of a technology boom. IBM had just introduced its first personal computer. An upstart, Apple Computer, Inc., had launched its Apple II.

"I could see that there would be incredible use of PCs in the corporate world," Baskin says. "They would be used for everything. I could see people using PCs to prepare presentations that you could have done using larger machines."

In 1984, General Parametrics introduced what are today its flagship products: Pictureit, a graphical software package for the IBM Personal Computer, and Videoshow, a hardware device that connects a PC monitor or a projector.

With Pictureit, users could create presentations using charts, graphics and text. Using Videoshow, they could display the graphics with the aid of a remote control. The products were to be sold through a network of retail outlets.

Baskin targeted corporations and the federal government. Unfortunately, his university colleagues were left out of his strategy. "Teachers don't have the funds," he notes. By that time, General Parametrics had attracted the attention of a couple of high-profile venture capital companies — Sevin-Rosen Ventures and Kleiner, Perkins, Caulfield & Byers. Each firm invested $3 million.

Baskin founded *General Parametrics in 1981*

Propelled by sales of Pictureit and Videoshow, General Parametrics grew to about $23 million in revenue for 1987, earning it the No. 15 spot in *Inc.* magazine's list of fastest growing public companies for that year. *Inc.* estimated its annual growth rate at 191%. Fast-growing Sun Microsystems, Inc. earned the No. 17 slot in the *Inc.* list.

General Parametrics expanded its line to add more desktop presentations-oriented software packages and more sophisticated versions of Videoshow.

Today, General Parametrics boasts sales to some of the largest corporations in the U.S. Videoshow is used in the board rooms of Coca-Cola Co., American Express Co. and General Motors Corp.

Della Steen, a systems analyst at Chevron Chemical Co.'s IS group, said her firm uses Videoshow and other General Parametrics software packages.

"Creating slides was costing us between $8 and $15 each," Steen says. "This way we can use a $5 diskette over and over again."

Today, General Parametrics has embraced Apple's Macintosh, a logical expansion for a company that has focused its business on graphical presentations. Also, it will support IBM's Personal System/2.

Pitta is a former *Computerworld* West Coast senior correspondent.

High-definition TV plan comes into focus

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — The U.S. electronics industry has unveiled its blueprint for building a U.S. high-definition television (HDTV) industry, including a request for $1.35 billion in federal grants, loans and guarantees.

The American Electronic Association's (AEA) master plan, set forth at a congressional hearing May 9, envisions a government-industry consortium that proponents said they believe will provide a host of beneficial "ripple effects" for the semiconductor, computer and communications industries.

For example, experts said an HDTV industry could develop compact, flat-panel displays and create a market for U.S. semiconductors [CW, March 13].

Pat Hill Hubbard, an AEA vice-president, said that government help is needed since U.S. businesses view HDTV manufacturing as a risky venture with low profit margins and a long wait for a return on investment.

Although Congress and the Bush administration want to support the development of high-tech industries in the U.S., the high cost of the AEA proposal will be an obstacle.

"I think they're hoping Uncle Sugar will fund it, and I don't think they should depend on it," said U.S. Secretary of Commerce Robert A. Mosbacher.

Mosbacher indicated that federal support for an HDTV industry is likely to be more modest, such as the $30 million in research grants now available from the Defense Advanced Research Projects Agency (DARPA).

The commerce secretary added that he leans toward relaxing antitrust constraints on joint manufacturing and improving tax incentives to boost the HDTV industry. The Bush administration plans to outline its official HDTV proposal in July.

> "I THINK they're hoping Uncle Sugar will fund it, and I don't think they should depend on it."
>
> ROBERT A. MOSBACHER
> U.S. SECRETARY OF COMMERCE

The AEA plan, drafted by the Boston Consulting Group, calls for the following:

- The formation of the Advanced Television Corp. as a government-industry consortium that would guide the development of the U.S. HDTV industry. It would own the HDTV technology and license it at a discount to firms that manufacture the equipment in the U.S.
- Allotment of $50 million over three years for agencies to develop HDTV standards.
- Obtaining $300 million over three years for DARPA's research grants, which would be a 10-fold increase in the current program.
- Securing $500 million in low-interest loans and $500 million in loan guarantees to help build HDTV factories.
- Legislation or regulatory moves to resolve antitrust problems and to ensure that HDTV standards are owned by the U.S. government or the consortium.
- Government efforts to speed up the installation of fiber-optic cables to U.S. residences.

Mosbacher warns *of modest federal HDTV support*

Video

FROM PAGE 95

Japanese HDTV, could be an indigenous answer to the technology, according to Shaffer. "Companies like Digital F/X could be important," he said.

The technology for digitizing video is math-intensive. "It would take several Crays in parallel to do the same arithmetic," Mayer said.

"We had to build a very powerful image processor — two billion arithmetic calculations per second," said Mayer, who also claims the product is "tooled for real time."

According to Roberts, digitized video is a good deal easier to manipulate than analog. For instance, he said that it can handle color and brightness at the same time, unlike analog television.

Two major investors in the project are computer companies Apple Computer, Inc. and Intel Corp., according to Mayer. Other investors include Stanford University and Mitchell Kapor, founder of Lotus Development Corp.

In the initial year that Digital F/X's product has been available, Roberts estimates the company has sold about 100 systems.

IN BRIEF

Taken for granted

The National Science Foundation last week renewed five-year grants funding four supercomputing centers. Offering high-power research opportunities now through 1995 are centers at Cornell University, the University of Illinois at Urbana, Carnegie-Mellon University and the University of California at San Diego.

.....

Popping the poison pill

Compaq Computer Corp. last week added its name to the swelling ranks of computer companies that have adopted stockholder rights plans aimed at staving off uninvited acquisitors.

.....

It's baaaack

A 3-year-old tax controversy reared its head last week at Adapso's 70th management conference, when association leaders cited the Internal Revenue Service for insufficient vigilance. Several dozen corporate chief executive officers in attendance volunteered to show the IRS documentary proof that some firms are continuing to classify some tech workers as independent contractors, rather than employees, in violation of the 1986 tax law. What's in a name? In this case, exemption from withholding taxes and larger deductions for the scofflaws and exposure to billions of dollars in fines and back taxes for some of the country's leading corporations, according to the angered CEOs.

.....

It's coming

Compact Disk Interactive (CDI), a hybrid sound, text, image and motion video technology seen as a smart bet to make serious strides in the entertainment, education and information businesses, took a giant step closer to market last week. Japan's Matsushita Electric and Sony Corp. joined forces with the Netherlands' Philips Consumer Electronics to promote and develop CDI.

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Rabbit pulls foxy moves to avoid briar patch

BY PATRICIA KEEFE
CW STAFF

MALVERN, Pa. — A steady downward trend in revenue has forced Rabbit Software, Inc. to pull a turnaround specialist out of its hat to rein in and refocus the meandering company. But don't expect a magical recovery.

Alfred Berkeley, Rabbit's chief executive officer and board chairman since January, is a man who pulls no punches in assessing the company's problems. "Rabbit was reacting to opportunities, trying to hit home runs with a small number of small contracts [when it should have been] dictating its own course," he said.

"Marketing our source code product to OEMs was eating us alive with support and customization requirements," Berkeley explained. Two OEM contracts with Ungermann-Bass, Inc. and Motorola, Inc. will be retained.

Berkeley is trying to get the supplier of Systems Network Architecture (SNA) software back on track by switching from its OEM focus into the end-user market. He is targeting the world's 1,000 largest communications equipment purchasers.

The carrot on a stick offered to users will be Rabbit's traditional gateway and workstation SNA business. "We'll have a standard set of code that will allow you to work on DOS, Unix, OS/2 and various user interfaces, bus structures and communications protocols such as X.25, DFT and SNA," Berkeley said.

Rabbit has gone through $20 million in investment capital and another $20 million in revenue in almost seven years of existence, according to Berkeley, a 17-year veteran of Alex Brown & Sons, Inc. He is on leave from the Baltimore-based investment house to revamp Rabbit.

"Rabbit was trying to do too many things, dissipating its resources on [too] broad a spectrum of products, channels and delivery modes," he said. However, work on Rabbit's alternative to IBM's Communications Manager is still under way.

Besides the massive spending, Berkeley said, Rabbit was beset by chaotic shifts in strategy, target customer bases and marketing directions. The result was several miserable quarters. The latest of these, first-quarter 1989, saw a sharp decrease of 46% in revenue over the same period in 1988. Rabbit lost $1.9 million for the quarter in contrast with a loss of $292.9 million for first-quarter 1988.

Berkeley candidly admitted that as many as four more loss quarters could follow before the company generates a positive cash flow: "Revenues will look terrible. I don't care about profits right now. This is not a sprint, it's a marathon."

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Varga

CONTINUED FROM PAGE 95

word processing, is producing information that nobody wants, let alone needs. If this is indeed the cynical explanation, then maybe the problem is one of measurement. Our government has not yet developed a way to measure productivity in many service industry sectors, including information systems services, leasing, diversified financial services and banking.

John Young, chief executive officer of Hewlett-Packard, recently noted that productivity in the entire services area has been poor. A recent study by the Brookings Institute noted that measurement errors account for no more than a third of the slowdown in the services sector. Others have noted that productivity is down because of a scarcity of labor.

How do they know? "There is not enough illumination on the subject," said Zoltan Kenessey, senior economist at the Federal Reserve System's Division of Research and Statistics. "The fact is that no one really knows what's going on regarding productivity, let alone productivity growth, within the services sector. It'a a very complex subject."

Between 1981 and 1988, the U.S. Department of Labor's Bureau of Labor Statistics noted that employment within the computing and information processing services industries increased from 312,000 to 729,000 employees. Productivity has gone from $29,500 in annual revenue per employee to $90,800 during that period. Yet productivity growth has decreased from 44% to 8.6% per year.

By the simplest definition, productivity equals output per man-hour. Or, if you prefer, woman-hour. Output per person-hour? Maybe just plain output.

But, productivity growth? What does that really mean? Especially in the services sector. Generalizations about lifestyle and quality of life — whether you require two television sets in every room, three videocassette recorders, four microwaves and two telephones in every car — don't say anything. The fact of the matter is that no one knows what's really going on in the area of service sector productivity and productivity growth. Generalizations from Nobel laureates and CEOs who purport to give us answers just raise some interesting questions.

Varga, a 20-year computer industry veteran based in Frenchtown, N.J., is publisher of "The Gerberus Report," a study of industry mergers and acquisitions.

Faint praise for FSX deal

Pact seen as better but still lacking in source code safeguards

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — Despite general agreement that the latest pact with Japan for co-production of an FSX fighter plane is a better deal than the U.S. has usually received, critics still consider it a technology giveaway to a high-tech rival.

A key issue in the debate is the extent to which the U.S. partner, General Dynamics Corp., will provide aircraft software to the Japanese partner, Mitsubishi Heavy Industries, at a time when Japan is trying to build up its aerospace industry.

The original agreement negotiated last December "would have turned over all of the source code — the industry's crown jewel," according to Thomas T. Chan, a Los Angeles attorney and trade consultant.

However, after protests from inside and outside the government, the Bush administration negotiated a "side letter" to place restrictions on technology transfer. "It seems like the U.S. is getting a little bit smarter now" in terms of protecting source code, Chan said.

Under the revised agreement, General Dynamics and Mitsubishi will modify the U.S. F-16 fighter to produce about 130 FSX planes for Japan. General Dynamics is supposed to get 40% of the design and production work.

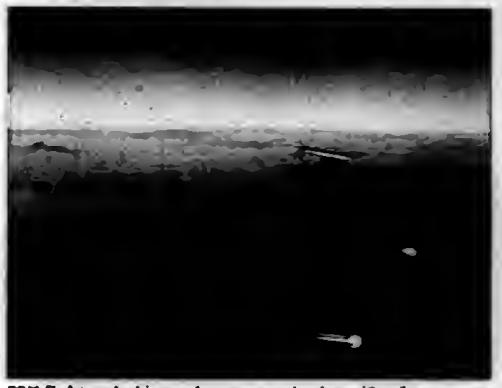
Critics, asserting the U.S. should have insisted that Japan buy F-16s, argued that the safeguards against technology transfer are weaker than they appear. In addition, they said, Japanese industry will be learning valuable systems-integration techniques.

Rep. Richard A. Gephardt (D-Mo.) faulted the administration for putting the revisions in a side letter rather than in the actual defense agreement. "The Japanese are masters at interpreting such side letters to their own advantage, as in the semiconductor and supercomputer agreements," he said at one of the many hearings held in the last two weeks.

In congressional testimony, Defense Secretary Richard B. Cheney defended the FSX deal, saying it is better than having the Japanese build the plane with European partners. He testified that technology-transfer concerns have been addressed in the following ways:

- The avionics hardware and software will be developed by Japan with no U.S. involvement or technology transfer.
- Source code for the flight-control system will be developed either solely by the U.S. manufacturer or solely by Japan. The only software transferred will be the source code for the fire-control computer — which controls weapons — but only to the extent necessary for integration with Japan's avionics systems.
- Such provisions will be strictly supervised by several U.S. agencies. "The software technology transferred will not assist Japan to become a competitor in the aerospace industry," Cheney testified.

Two critics, Sens. Alan J. Dixon (D-Ill.) and Jesse Helms (R-N.C.), said that while the Bush administration is telling Congress that only the fire-control software will be released, the side letter to the agreement states more broadly that "Japan will receive access to the source codes necessary to develop the mission control computer."



FSX fighter deal is seen by some as technology gift to Japan

Clyde V. Prestowitz Jr., trade analyst at the Carnegie Endowment for International Peace, located here, said the revised deal is only a little better than the original.

In a recent newspaper column, Prestowitz said the restrictions on software transfer "are meaningless as long as they are qualified by the need to reach project objectives."

Moderate senators such as William S. Cohen (R-Maine) observed that the FSX deal has reached a high profile at a time when Americans have a "deep-seated resentment" over the U.S.-Japan trade deficit, the semiconductor trade agreement and the Toshiba Machine Co. scandal.

The tensions were reflected when the Senate Committee on Foreign Relations supported the FSX by a close 9-to-8 vote that crossed party lines. The full Senate's vote on a resolution of disapproval is expected to be close as well, but several lawmakers predicted that the FSX deal will ultimately prevail because opponents do not have enough votes to override a presidential veto.

Even so, "the Japanese government and industry would be well-advised to take our debate as a warning that the economic and commercial relationship [with the U.S.] must change substantially for the better," said Sen. Claiborne Pell (D-R.I.).

Tron inventor decries growing U.S. fear of Japan infiltration

BY LORI VALIGRA
IDG NEWS SERVICE

TOKYO — Ken Sakamura, the Tokyo University professor who started The Real-Time Operating System Nucleus (Tron) project, says the Japanese are sick of Japan-bashing.

"In the current climate of trade friction, anything new and Japanese is immediately considered an economic threat to certain countries," he said at a press conference here earlier this month.

Tron is a university-corporate cooperative effort aimed at creating a standard for computers and software used in applications ranging from intelligent homes to factories.

Tron has been named as an alleged market barrier by the U.S. in recent trade actions, partly because the project's standard is being considered for adoption by Japan's Ministry of Education. The market for educational personal computers is virtually untapped in Japan, and U.S. PC makers have complained in the past that Tron may be the next trade-war front if they are locked out of that market.

But the Japanese education market is not the U.S.' only concern. Despite their general inability to penetrate Japan's market, one area in which U.S. semiconductor makers have fared well is microprocessors. Indeed, Motorola, Inc. and Intel Corp. dominate the market, and few Japanese microprocessors — with the exception of those made by NEC Corp. — challenge that dominance. If Tron processors are widely adopted, they threaten to chip away at the market lead U.S. makers now enjoy. The 32-bit version of the Tron chip design now being used by three Japanese chip makers is one of the most highly integrated microprocessors developed to date, Sakamura said.

Tron as a worldwide standard

Sakamura's intention is to have Tron widely adopted as a worldwide standard for automating all aspects of human and city life, including buildings and roads.

He is quick to point out that Tron is not merely a Japanese project: Among its participants is IBM Japan Ltd., which is working on several Tron computers. Also, early Tron computer models use Intel microprocessors.

"Tron will create a worldwide hardware and software market," Sakamura emphasized. "So European and U.S. makers will be able to make products to penetrate the Japanese market. Software designers can make programs that can be translated easily from one language to another." He said that Tron has Japanese Kanji ideograph-handling ability embedded in the operating system's design, which makes such translations easy.

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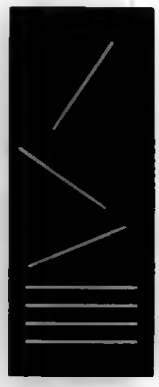

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Conversion experts in demand

IS professionals often lack the skills or desire for systems changeovers

BY SHERYL KAY
SPECIAL TO CW

As information systems organizations take advantage of new offerings in hardware, operating systems and programming languages, they face a growing need for systems professionals who can help them move systems from one platform to another. Rather than develop new systems from scratch to accommodate new technology, companies convert existing systems to run on the new platform.

"If they have four million lines of code worth $25 million or so to redevelop, where a conversion may cost in the $2 million dollar range, why throw the old code away?" asks David Marshall, manager of technical support at Neosynetics, Inc. in Des Plains, Ill., a consulting firm that specializes in conversions.

Companies facing a conversion often tap consulting firms to do the work rather than hire experienced specialists or train in-house staff to handle a onetime undertaking.

Conversion specialists earn attractive salaries, according to managers at several of these consulting firms. A programmer/analyst with three years of experience that includes conversion work might earn as much as $33,000 a year. A systems analyst with five or more years of migration experience may take in more than $50,000 a year.

Five-step process

In brief, conversion specialists go through five steps during a migration, according to consultant Ron Horsey at Commercial and Industrial Systems in Boston. They collect and analyze information and documentation on the existing system; develop a plan to move to the target system; code the conversions and conduct tests; switch to the new system and train personnel in its features; and, finally, correct any lingering problems.

The breadth of conversion work can make it highly stimulating, not to mention fast-paced, according to Alice Babcox, manager of conversion operations at Teco Technologies, Inc., a consulting firm in Tampa, Fla. "What's exciting for my team is that we convert our entire clients' shop, not just one application, so there's no time to get bored," Babcox says. While some aspects of conversions may be similar, at least 30% of the work is different with each project, she adds.

Marshall says that because of the nature of their work, conversion consultants sometimes are admired by members of the in-house staff. "Generally, when a company is converting to a system, they don't have a great deal of knowledge of the target system," he says. "A conversion specialist, who may just be an average employee in a shop that already uses the target computer, gets to be viewed as an expert at the client site."

But conversion specialists also are viewed with condescension, according to George Hathaway, practice leader for strategic systems development at the consulting firm Index Group, Inc. in Cambridge, Mass. Performing conversions is not viewed as a particularly glamorous calling, perhaps because the specialists are not necessarily creating new systems, he says.

Furthermore, it is rare to find systems professionals who have mastered more than one hardware platform, operating system or language, Hathaway says. "There are many people in our business who would rather maintain the status quo and continue with what they know best rather than learn something new," he says. For these reasons, most consultancies will hire professionals who do not have conversion experience, assuming they possess certain technical knowledge and personal characteristics.

From the technical standpoint, employers agree that serious contenders for a particular project must have a thorough understanding of the target system as well as some exposure to the platform currently in use.

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On the personal side, dedication and determination are important because conversions must be completed within a certain time frame. There is no time to become intimate with each application being converted, according to Babcox. "A conversion specialist can't get whipped — he can't give up," she adds.

Conversion specialists also should be attracted to complex situations, according to Hathaway. "It's the person who sees an almost impossible situation and says, 'That's the one I want to tackle,' " he says.

Conversion projects, which tend to span six to nine months, can be located around the world. "In my 15 years, I've been involved with conversions from Germany to Hong Kong and even one in Shanghai," Marshall says. However, most U.S. consulting firms specializing in conversions find enough work in the U.S. to keep their people busy.

Learning through doing

Learning conversion methodology is difficult, and the consensus among employers is that the best way to learn is through hands-on experience. Because most employers are willing to train the professionals they hire in migration techniques, they provide an exceptional opportunity to acquire highly sought-after skills without having to attend classroom training.

Such knowledge may be of value to systems professionals in general, according to Larry Azevedo, a program manager at Online Software International, Inc. in Cromwell, Conn. Azevedo notes the widespread praise for open systems architectures and distributed data management, under which an organization may use systems from several vendors.

If these practices become as popular as some people predict, then systems professionals should become familiar with as many platforms as possible even if they do not choose conversions as a career path, he says.

Kay is a Tampa, Fla.-based business consultant and free-lance writer specializing in emerging technologies and human resources.

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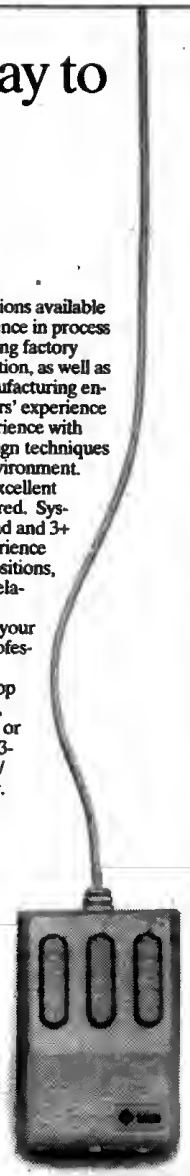

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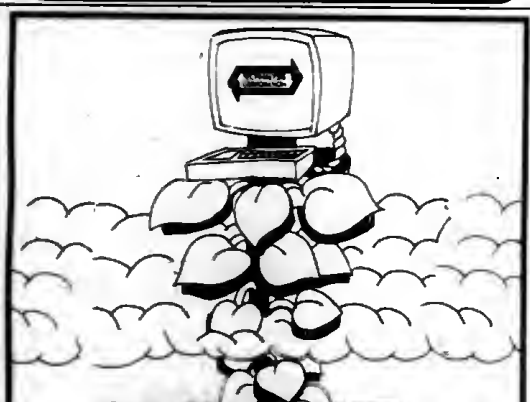

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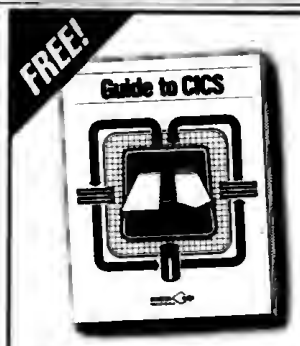

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MARKETPLACE

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Reluctance to convert to AS/400 stimulates secondary marketplace

BY TONY MEMBRINO
IDC FINANCIAL SERVICES CORP

Activity in the System/36 5360 secondary marketplace remains brisk. This status is not bad for a product line that was replaced by the Application System/400 last year and is celebrating its sixth birthday this month.

The following factors explain why activity remains strong in the System/36 used marketplace:

- The conversion from a System/36 to an AS/400 has been an arduous and time-consuming process for some users. Therefore, System/36 end users have been fairly hesitant about moving to the AS/400.
- The existing System/36 base can grow sufficiently with the System/36 via upgrades, so users do not yet need the additional capacity that the AS/400 provides.
- The cost of converting to an AS/400 is substantial.

IBM is certainly doing its part to entice System/34, 36 and 38 users to the AS/400. For users of the 5360 and 5362, IBM will discount the AS/400's operating system, OS/400, by 20% for customers who order an AS/400 before Sept. 30 and have it installed before Dec. 29. In addition, IBM is offering a 30% reduction of the one-time or primary license charge for selected software programs.

If these programs prove successful for IBM, users can expect to see a greater supply of 5360 and 5362 machines during the fourth quarter in the System/36 used marketplace.

Strong upgrade demand

According to IDC Financial Services Corp.'s third-party contacts, the majority of their business is centered on upgrading existing 5360 systems. The demand for additional System/36 processors, however, has picked up since the fourth quarter.

Some System/34 users, as well as 5362 users, have opted to go to the used marketplace and acquire 5360 processors instead of migrating to the AS/400. In addition, a few 5360 customers have taken on more of these machines to satisfy their processing requirements.

Secondary market trading of System/36 machines during the fourth quarter of 1988 was active, and values remained stable. Since January, used 5360 Model B processors that house 200M-byte drives have gradually declined in value. In January, a 5360 Model B23 retailed at $11,900. The same machine in early May was retailing for $9,400, a 21% decline. Both the machine and drive are readily available, and demand has been good.

Used values for 5360 machines that have 358M-byte drives — mainly the D2K, D2L, and D2M models — have fared better than the 200M-byte models. This market situation is the result of two factors: the strong demand from existing System/36 users to increase disk capacity, and limited availability of the 358M-byte drive on the secondary market. Through the addition of 358M-byte drives on a 5360 Model D2K, users can increase total disk capacity to 1,432M bytes, a 79% increase over the capacity achievable with the 200M-byte drives.

MANY SECONDARY market contacts are anticipating that the demand for 5360 upgrades will remain strong through the rest of the year.

To utilize more than two 358M-byte drives with an existing Model D2K system, an attachment called a trailer is needed. The trailer has been a hot item on the System/36 used market since the beginning of the year, and users are paying a premium for both the 358M-byte drive and the trailer.

While prices may be inflated for the 358M-byte drive and its trailer, users have been paying the prices because the secondary market can deliver more quickly than IBM. With the exception of the popular 5363, the System/36 is in limited production and delivery delays of 60 days and longer are not unheard of.

Many secondary market contacts are anticipating that the demand for 5360 upgrades will remain strong through the rest of the year. More System/36 machines are expected to become available from users migrating to the AS/400. However, these processors will be used to obtain parts to satisfy the demand for upgrades.

For more information, contact IDC Financial Services Corp.'a Terri LeBlanc at 508-872-8200.

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The BoCoEx index on used computers

Closing prices report for the week ending May 12,1989

	Closing price	Recent high	Recent low
IBM PC Model 076	$625	$800	$450
XT Model 086	$1,050	$1,150	$900
XT Model 089	$1,125	$1,400	$950
AT Model 099	$1,500	$2,000	$1,500
AT Model 239	$1,800	$2,100	$1,775
AT Model 339	$2,000	$2,375	$1,800
PS/2 Model 60	$3,075	$3,100	$2,500
PS/2 Model 80	$3,850	$4,100	$3,100
Compaq Portable I	$625	$750	$550
Portable II	$1,900	$2,100	$1,750
Portable III	$2,700	$2,950	$2,400
Portable 286	$1,700	$1,975	$1,675
Plus	$1,000	$1,200	$900
Deskpro 286	$1,900	$2,350	$1,800
Deskpro 386	$2,625	$2,900	$2,500
Apple Macintosh 512	$550	$775	$550
512E	$775	$975	$600
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II	$3,800	$4,175	$3,425
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Training changes in the 1990s

A heavier load calls for burden sharing and greater automation

BY BILL SEBRELL
SPECIAL TO CW

Training budgets are high, and when considering the work time that is lost because of training, the costs are even greater. But training is not getting any cheaper, and the need for it is not going away. In fact, if several recent studies are correct, the 1990s will see a growing number of entry-level workers who are functionally illiterate and will require extensive training.

In addition, technical workers already on board are going to require even more training to utilize the productivity tools that are becoming available. Employers, of course, will be expected to bear that training load.

The problem is that there is no way that most organizations can simply pass along the rising costs of training as a business expense. The competition from the Pacific Rim and other regions will not allow it.

The situation is not hopeless, however. There are some potentially feasible answers to the problems. The partnership between employees and employers today is not so rigid that it cannot be shifted to a more productive relationship.

Historically, when an individual in MIS was hired, it was frequently stated or implied that the company would provide training and the training would be delivered during company time.

One mutually beneficial alternative — a new partnership — is for the company to allow the employee to select and determine the pace of training to take place both within and outside of the normal work day.

Since both parties benefit, this solution is not unfair. Furthermore, it can lead to significant reductions in the cost of delivering training.

Stand up and talk

If the new partnership is to work, however, companies will have to modify how the training is delivered. Currently, the most effective vehicle is the stand-up lecture.

Companies should begin to automate selected portions of today's training to get ready for the future. Educational technologies such as interactive video, computer-based training, satellite and cable television courses, audio conferencing and even videotape can be upgraded from specialized, secondary status to complementary and eventually primary means of delivery.

Currently, automated training does not begin to compare to the stand-up lecture in terms of quality and development costs. In most cases, the automated delivery has not lived up to expectations.

There has to be a slower, more workable transition than the radical abandonment of the traditional lecture that we saw with the early introduction of media. It is necessary to shift to the new technologies in a planned and orderly manner in time to counter the difficulties of the next decade.

There are some relatively inexpensive, generic courses commercially available that use the automated delivery techniques. These courses have not been particularly successful as stand-alone teaching tools, nor have they been readily accepted by the technical community.

If these self-study courses are selectively combined with instructor-led workshops tailored to an organization's unique applications, time in the classroom will be reduced considerably, and costs will be reduced as well.

More importantly, in some pilot offerings, students have genuinely liked this type of delivery. Total training time has been reduced, and the training objectives of both the organization and the students have been met. A large insurance company recently conducted such a pilot program to teach IBM's IMS DL/I using interactive video followed by a workshop of stand-up lectures.

Cost cutters

With this type of transitional delivery, development costs are not excessive and may even be reduced. Delivery costs certainly are reduced significantly. The problem of not being able to place students in the right training course at the right time is at least partially averted. Employees can begin to manage their own training time, problems can be minimized, and quality can be measured through the testing that is inherent in media delivery. The transition to greater use of automated delivery can be accomplished without any abrupt or traumatic changes in the organization.

One disadvantage to such a trend is that companies must provide more and easier access to the necessary training devices and media courses so that people can manage training time more effectively.

Recent graduates entering the work force today do not appear to see many problems with the concept of the new partnership. They may have been exposed to this type of training in college and secondary school. People who are already employed, on the other hand, are going to face some adjustments that they may not be comfortable with for a while.

The bottom line is that it will be too expensive to continue the current method of training. The transition to a media/workshop form of delivery begins to address the issues of the 1990s so that businesses can take steps toward more automated training as the appropriate tools and techniques become available.

Sebrell is a vice-president at Data Base Management, Inc., a subsidiary of American Management Systems, Inc. in Manchester, Conn.

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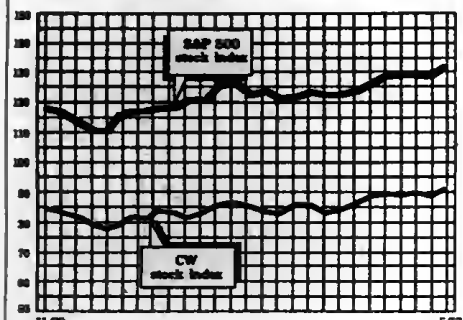
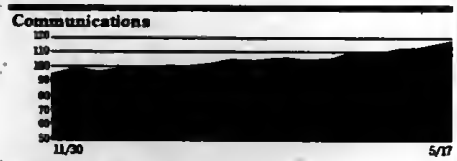
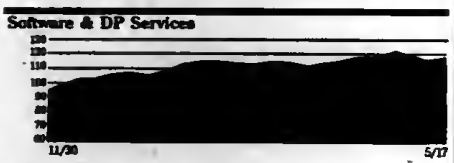


Indexes	Last Week	This Week
Communications	113.6	118.0
Computer Systems	95.5	96.9
Software & DP Services	116.3	118.6
Semiconductors	58.4	61.9
Peripherals & Subsystems	78.2	79.3
Leasing Companies	109.1	115.9
Composite Index	88.5	91.6
S&P 500 Index	128.6	132.9





Computerworld Stock Trading Summary

CLOSING PRICES WEDNESDAY, MAY 17, 1989

E X C H		52-WEEK RANGE (1)		PRICE CLOSE MAY 17, 1989	WEEK NET CHANGE	WEEK PCT CHANGE
	Communications and Network Services					
N	AMERICAN INFO TECHS CORP	60	43	57.25	1.0	3.4
Q	ANDREW CORP	22	15	20.9	0.8	3.8
Q	ARTEL COMM CORP	5	1	5	0.6	14.3
N	AT&T	35	24	34.625	1.0	3.0
Q	AVANT GARDE COMP INC	2	0	0.5	0.0	0.0
Q	AVANTEK INC	7	4	5	-0.4	-7.2
N	AYDIN CORP	15	13	14.25	-0.5	-3.4
N	BELL ATLANTIC CORP	65	55	64.125	2.0	3.5
N	BELLSOUTH CORP	49	39	47.625	2.0	5.0
Q	COMPRESSION LABS INC	9	3	7.75	1.0	28.5
Q	COMPUTER NETWORK TECH	2	1	1.563	0.0	21.9
Q	CONTEL CORP	56	21	56.625	1.3	2.3
Q	DATA SWITCH CORP	9	4	4.625	-0.3	-5.1
Q	DIGITAL COMM ASSOC	28	17	22.125	-0.8	-3.5
Q	DYNATECH CORP	23	17	17.625	-0.1	-0.7
Q	FIBRONICS INTERNATIONAL INC	9	2	4.75	-0.3	-5.0
Q	GANDALF TECHNOLOGIES	9	4	8	0.8	9.1
Q	GENERAL DATACOMM INDS	8	3	5.375	0.0	0.0
N	GTE CORP	53	34	52.75	2.9	5.8
Q	INFOTRON SYS CORP	14	10	9.8	-0.5	-5.0
N	ITT CORP	80	46	67.75	1.8	2.9
N	M A COM INC	11	5	8.25	0.4	4.8
Q	MCI COMMUNICATIONS CORP	39	12	37.875	2.9	8.3
Q	NETWORK EQUIPMENT TECH INC	25	14	20	1.9	7.9
Q	NETWORK SYS CORP	12	9	9.375	0.1	1.4
Q	NORTHERN TELECOM LTD	30	14	17.25	0.0	0.0
Q	NOVELL INC	36	22	35.75	8.0	5.6
N	NYNEX CORP	78	51	75.375	3.4	4.7
N	PACIFIC TELESIS GROUP	41	29	40.625	2.1	5.5
A	PENRIL CORP	9	4	5.75	0.3	4.9
N	PLESSEY PLC	46	29	42.875	-0.9	-2.0
N	SCIENTIFIC ATLANTA INC	19	10	17.375	0.4	2.2
N	SOUTHWESTERN BELL CORP	52	35	52.25	4.0	8.3
Q	3 COM CORP	29	16	27.625	1.1	4.2
N	US WEST INC	68	51	67.625	2.9	3.8
	Computer Systems					
Q	ALLIANT COMPUTER SYS	7	2	5.375	0.8	16.3
Q	ALPHA MICROSYSTEMS	8	9	7.625	0.0	0.0
Q	ALTOS COMPUTER SYS	10	5	8.75	0.4	5.5
A	AMDAHL CORP	28	15	21.625	0.0	10.1
Q	APOLLO COMPUTER INC	17	7	13.25	0.3	1.9
Q	APPLE COMPUTER INC	48	24	43.25	2.1	4.7
N	BOLT BERANEK & NEWMAN	19	7	8	0.5	6.7
N	COMPAQ COMPUTER CORP	82	47	91	3.3	4.2
Q	COMPUTER AUTOMATION INC	10	2	4.75	0.5	5.6
Q	CONCURRENT COMP CORP	9	4	5.875	0.3	4.4
Q	CONTROL DATA CORP	39	19	20	0.4	1.9
Q	CONVEX COMPUTER CORP	15	7	14	1.3	8.5
N	CRAY RESH INC	80	48	47.625	-2.5	-5.0
Q	DAISY SYS CORP	12	3	3.688	-0.4	-10.6
N	DATA GEN CORP	25	14	17.375	0.6	3.7
Q	DATAPOINT CORP	6	4	3.75	0.0	0.0
Q	DELL COMPUTER CORP	13	7	7.25	0.0	0.0
N	DIGITAL EQUIP CORP	122	86	98.625	0.6	0.7
N	FLOATING POINT SYS INC	4	2	2.75	-0.1	-4.3
N	HARRIS CORP	31	25	30.75	1.3	4.2
N	HEWLETT PACKARD CO	82	54	54	-0.6	-1.8
N	HONEYWELL INC	80	57	76.875	0.6	1.0
N	IBM	131	106	111.8	1.9	1.7
Q	INFORMATION INTL INC	15	12	15.75	0.4	2.6
Q	IPL SYS INC	7	1	8.25	0.1	2.0
Q	MAI BASIC FOUR INC	21	7	7.375	0.3	8.0
N	MATSUSHITA ELEC INDL LTD	219	160	175	-5.5	-3.0
Q	MEGADATA CORP	2	1	1.376	0.0	0.0
Q	MENTOR GRAPHICS CORP	41	23	40.25	3.1	8.4
Q	MSI INC	5	1	2.125	-0.1	-5.5
N	NCR CORP	70	51	58.25	0.0	0.0
N	PRIME COMPUTER INC	21	12	19.75	-2.0	-10.0
Q	PYRAMID TECHNOLOGY	20	11	14	-0.3	-1.8
Q	SHAREBASE CORP	2	1	2.25	0.1	2.8
Q	SILICON GRAPHICS CORP	25	14	18.25	0.8	4.3
Q	STRATUS COMPUTER	22	21	29.25	0.5	2.6
Q	SUN MICROSYSTEMS INC	21	13	20.25	2.3	12.8
Q	SYMBOLICS INC	3	1	2	-0.2	-8.9
Q	SEQUENT COMPUTER SYS INC	28	14	24.75	0.3	1.0
N	TANDEM COMPUTERS INC	21	12	16.375	-0.3	-1.9
N	UNICY CORP	49	28	44.75	1.6	4.4
N	ULTIMATE CORP	14	8	10.25	0.0	0.0
N	UNISYS CORP	39	25	25.625	0.8	3.5
A	WANG LABS INC	12	7	8.25	0.0	0.0
	Software & DP Services					
Q	ADVANCED COMP TECH	4	1	2.129	-0.1	-5.6
Q	AMERICAN MGMT SYS INC	15	12	13.5	0.4	2.6
Q	AMERICAN SOFTWARE INC	10	9	10.875	0.6	3.3
Q	ANACOMP INC	12	9	9.375	-0.1	-1.8
Q	ANALYSTS INTL CORP	15	9	16.75	-1.0	-5.6
Q	ASHTON TATE	38	19	21.75	0.5	0.3
Q	ASK COMPUTER SYS INC	15	12	14.5	-0.1	-0.8
Q	BOOKER INC	28	23	37.5	1.3	3.4
N	AUTO DATA PROCESSING	42	38	39.875	1.3	3.2
Q	BMC SOFTWARE INC	20	9	19.75	0.3	1.3
Q	BOOLE & BABBAGE INC	20	9	19.75	0.0	0.0
Q	BURR-BRIGLAND INC	19	9	12	0.5	4.0
N	COMPUTER ASSOC INTL INC	40	24	38.125	2.3	6.1
Q	COMPUTER HORIZONS CORP	12	7	7.688	-0.2	-3.4
N	COMPUTER SCIENCES CORP	55	40	52.75	2.6	5.0
Q	CORPORATE SOFTWARE	19	5	14	0.3	1.8
N	COMPUTER TASK GROUP INC	17	10	13.875	-0.3	-2.1
Q	COSMOS INC	5	5	8.129	-1.0	-14.0
Q	COMSHARE INC	30	19	28.875	-0.1	-0.4
Q	CULLINET SOFTWARE INC	9	4	8.375	-0.4	-4.8
N	DIGITAL MTNS (CLS E)	51	37	50.25	0.5	1.3
Q	HOBAN SYS INC	7	2	6.5	0.3	4.8
Q	INFORMIX CORP	28	7	8.5	-0.1	-1.3
Q	INTELLICORP INC	9	2	4.375	0.1	2.9
Q	ISSAC INC	19	5	1.5	-0.5	-2.2
Q	LEGENT CORP	37	16	26.25	1.9	7.1
Q	LOTUS DEV CORP	28	19	24	1.9	7.9
Q	MANAGEMENT SCIENCES AMER	14	9	11	0.1	1.1
Q	MICRO FRD INTL CORP	4	2	2.313	0.3	12.1
Q	MICROSOFT CORP	71	46	57.375	3.4	6.3
Q	NATIONAL DATA CORP	32	19	21.875	1.9	8.3
Q	ON LINE SOFTWARE INTL INC	9	4	8.75	0.0	0.0
Q	ORACLE SYS CORP	30	19	28	0.0	0.0
Q	RANDOPHIC SYS INC	16	12	17.75	1.3	7.9
Q	PHOENIX TECHNOLOGIES INC	19	12	14.25	0.1	0.3
Q	POLICY MGMT SYS CORP	30	21	30	2.0	7.1
Q	PROGRAMMER & SYS ENG	19	11	18.25	0.8	1.4
Q	RABBIT SOFTWARE INC	3	1	1.344	-0.1	-6.8
Q	RELATIONAL TECHNOLOGY INC	11	9	9.75	-0.3	-4.9
N	REYNOLDS & REYNOLDS CO	29	17	22.5	1.9	9.5
Q	SEI CORP	22	15	16.625	0.8	3.9
Q	SHARED MED SYS CORP	23	14	18.25	0.0	0.0
Q	SMS SOFTWARE INC	15	8	9.375	0.3	2.7
Q	SOFTWARE PLUS CORP	27	16	25.375	1.4	5.7
A	STERLING SOFTWARE INC	9	5	7	0.1	1.9
Q	SUNGARD DATA SYS INC	30	13	14.75	1.1	8.3
Q	SYSTEMATICS INC	27	25	26.25	0.0	0.0
N	SYSTEM CENTER INC	22	12	22.25	0.3	8.0
N	SYS. SOFT INC	38	9	24.75	8.0	13.8
	Semiconductors					
N	ADV MICRO DEVICES INC	17	7	9.375	0.3	7.1
N	ANALOG DEVICES INC	19	12	11.625	0.5	4.5
Q	ANALOGIC CORP	10	9	10	0.4	3.9
Q	CHIPS & TECHNOLOGIES INC	22	11	21.375	3.0	16.3
Q	INTEL CORP	37	19	31.5	2.3	7.7
Q	LSI LOGIC CORP	14	9	11.25	-0.3	-2.2
Q	MICRON TECHNOLOGY INC	39	19	24.25	1.8	7.8
N	MOTOROLA INC	55	38	51.25	3.4	7.0
N	NATL SEMICONDUCTOR	15	7	7.75	0.4	5.1
N	TEXAS INSTRS INC	51	35	43.625	4.1	10.4
A	WESTERN DIGITAL CORP	17	11	11.375	-0.1	-1.1
	Peripherals					
Q	ALLOY COMP	4	2	2.125	-0.3	-10.5
N	AM INTL INC	3	1	3	0.1	2.1
N	AST RESH INC	17	7	7.875	-0.1	-1.8
Q	AUTO TROL TECH CORP	8	4	9	-0.1	-2.4
Q	BANCTEC INC	14	9	12.25	-0.1	-1.0
Q	CIPHER DATA PRODS INC	11	8	8.75	0.0	0.0
Q	COGNITRONICS CORP	9	2	4.125	0.1	3.1
Q	CONNOR PERIPHERALS	12	7	11.375	0.3	2.2
A	DATAPRODUCTS CORP	19	8	14.9	-1.3	-7.8
A	DATARAM CORP	9	7	8.5	0.0	0.0
N	EASTMAN KODAK CO	50	40	43.5	-0.1	-0.3
Q	E M C CORP MASS	10	2	3.75	0.4	11.1
Q	EMULEX CORP	12	9	11.125	-0.3	-2.2
Q	EWING & SUTHERLAND	20	15	19.875	1.5	8.3
Q	ICOT CORP	4	2	2.625	0.0	0.0
Q	INTERLEAF INC	17	8	9	-0.4	-4.9
Q	IOMEGA CORP	5	2	2.688	0.0	0.0
Q	LEE DATA CORP	4	2	2.938	0.1	2.2
Q	MAGISTOR SYS CORP	4	2	2.063	0.1	2.9
Q	MAXTOR CORP	14	9	10.875	0.4	3.9
Q	MICROPOLIS CORP	25	8	8.375	0.1	8.0
Q	MINISCRIBE CORP	14	3	3	-0.1	-2.1
N	MINNESOTA MNG & MFG CO	75	39	73.75	0.8	1.0
Q	PERSONAL COMPUTER PRODUCTS INC	5	4	4.563	0.0	0.5
Q	PRIAM CORP	2	1	0.812	0.1	18.2
Q	PRINTRONIX INC	11	7	8.5	1.5	21.4
N	QMS INC	11	9	7.75	0.0	0.0
Q	QUANTUM CORP	19	9	14.5	0.8	5.5
N	RECOGNITION EQUIP INC	12	8	7.75	-0.1	-1.6
Q	REXON INC	8	4	7.25	-0.4	-4.6
Q	SEAGATE TECHNOLOGY	19	14	14	-0.4	-2.8
N	STORAGE TECH CORP	4	1	1.5	0.0	0.0
Q	TANDON CORP	2	1	0.625	-0.1	-18.7
N	TEKTRONIX INC	27	19	25.875	1.5	7.3
Q	TELEVIDEO SYS INC	1	0	0.375	0.0	0.0
N	XEROX CORP	88	50	86.75	0.1	0.2
	Leasing Companies					
Q	AMFLICON INC	119	11	14.25	2.8	23.9
N	CAPITAL ASSOCIATES INTER-NATIONAL INC	9	9	7.625	0.1	1.7
N	COMDISCO INC	37	19	28.5	1.9	9.0
Q	CONTINENTAL INFO SYS	7	0	0.75	0.2	33.2
Q	LDI CORPORATION	17	10	14.75	0.0	0.0
Q	PHOENIX AMERN INC	9	3	8.25	0.1	1.9
Q	SELECTERM INC	9	9	8.75	-0.5	-5.4

EXCH: N—NEW YORK; A—AMERICAN; Q—NATIONAL

Quick pickup

Despite less-than-glowing news, technology issues stay strong

The computer industry market is "clearly picking up," Needham & Co. analyst Barbara Iagur noted last week. "Maybe it's the improved economy, maybe it's just spring, but there's definitely a renewed sense of excitement." So much so, Iagur said, that even Hewlett-Packard Co.'s 2½-point slide to a Thursday close at 54¾ following a disappointing quarterly earnings announcement did not shake the general confidence. Neither did Cray Research, Inc.'s loss of 3½ points in the wake of its announcement that it will soon split into two separate computer companies. Cray closed at 49¾.

Computer Associates International, Inc. reported robust earnings and profit for fiscal 1989 and picked up 3¾ points, closing Thursday at 41¾. Microsoft Corp. rose 3¼ points after unveiling an enhanced OS/2 and announcing its intent to offer software integrated with IBM's Officevision. IBM itself gained 1¼ points on the strength of last week's Officevision debut; its stock closed Thursday at 112. Digital Equipment Corp. closed at 97⅛, up 1 point. Compaq Computer Corp. gained 3¾ points to close at 83. Sun Microsystems, Inc. closed at 19⅜, up 1⅜.

NELL MARGOLIS

Debuts have OS/2 in common

BY ROBERT MORAN
CW STAFF

A dozen independent software vendors showed up for IBM's announcement last week of products that, ironically, were more notable for their commonalities than for their distinctions.

Not all the vendors offered applications that melded with IBM's Officevision. However, each demonstrated how the powers of IBM's OS/2 Extended Edition bring the economies of the workstation and the local-area network to largely mainframe-based applications while giving corporations and their users the common look and feel of applications from IBM's Presentation Manager and Common User Access.

Paul Hessinger, president of Computer Task Group, Inc., a consultancy based in Buffalo, N.Y., said that Officevision is not as critical to vendor offerings as is the applications' presentation. "Companies will buy products that aren't part of Officevision," Hessinger said, "but vendors with applications that don't have the appropriate look and feel will have a tough time selling products."

Despite the commonalities, some vendors are closer than others to bringing out products. Comshare, Inc. in Ann Arbor, Mich., announced a new version of its Commander Executive Information System (EIS), expanded for office automation applications and LAN support.

Features include the ability to build executive briefing books and send or receive electronic mail and annotated screens via IBM Professional Office System or Officevision.

Commander EIS will be available in the fourth quarter. Depending on the implementation, prices range from $85,000 to $300,000.

Similar features tailored for human resources management will be available this summer from Tesseract Corp. in San Francisco. The company announced HRMS Intuition, which will provide users with the capability to, for example, send payroll information across an electronic network to appropriate personnel for action. Prices begin at $28,000.

Integral Systems, Inc. in Walnut Creek, Calif., introduced HR Minder, the first component of its HR Vision software that geographically distributes human resources and payroll management across all IBM Systems Application Architecture environments. The new software is slated to be available in the first quarter of next year at $20,000 per work group in a one-server domain.

PHOTOS BY JOHN MARTIN

Comshare President Rick Crandall *next to Commander EIS with office automation features*

Illustrating the role of OS/2 in Officevision, HR Vision users can manipulate documents, images of forms, messages and transactions — all of which can be delivered via Officevision to other users or directly to a centralized human resources management system. Both Management Science America, Inc. in Atlanta and McCormack & Dodge Corp. (M&D) in Natick, Mass., have embraced cooperative processing for their financial and human resources applications, and both firms are tooling their products for release in the second quarter of next year.

MSA announced that Brightview cooperative processing software, introduced last November, will be enhanced with pull-down menus and pop-up windows based on Presentation Manager. Brightview is scheduled to be available in the second quarter of next year.

M&D's Millennium Workstation allows users to access information from separate databases — including DB2 and VSAM — and analyze the information using SQL without regard to the source. Officevision is already integrated with the product.

Information Builders, Inc. in New York introduced PM/Focus, the Presentation Manager version of its fourth-generation language and database management system, for the workstation and the LAN. The new release is slated to be available in second-quarter 1989 and features tool sets for reporting, graphics, statistics and spreadsheets.

Sterling Software, Inc.'s Answer Systems Division in Canoga Park, Calif., introduced Presentation/Answer cooperative processing software that allows users to extract, summarize, reorganize and download data from across numerous databases on the mainframe. Presentation/Answer will reportedly be available by mid-1990.

Prices, including mainframe and PS/2 software components, range from $18,000 to $56,000, depending on mainframe configuration.

Other vendors that announced Officevision-compatible products include the following:

- **Arthur Andersen & Co.** said its Mac-Pac and Mac-Pac for the Application System/400 — management control packages for manufacturing engineering and materials planning — will be out the second half of next year.
- **American Management Systems, Inc.** in Arlington, Va., announced two government financial applications, a university financial application and a program for customizing telephone bills.
- **American Software, Inc.** said its Inventory Control and Accounting software is slated to be available the first quarter of 1990.
- **SAS Institute, Inc.'s** statistical and data analysis software is being developed for the first quarter of 1990. Prices have not been set.

Brightview lauded as MSA users get first view

BY AMY CORTESE
CW STAFF

ATLANTA — Management Science America, Inc. is alive and well, if last week's Interact user group meeting was any indication. The 4,000 customers gathered here for the annual conference applauded MSA's recovery from its financial troubles and lined up to see Brightview — MSA's first implementation of IBM's Systems Application Architecture (SAA).

Although Brightview — a cooperative processing software package — has been shipping for a month, many MSA customers were seeing it for the first time at the Interact conference. While most expressed enthusiasm for Brightview — and SAA — their time frames for implementation varied greatly.

"The thrust is to go to Brightview," said Otis Walker, manager of corporate systems at Blue Cross of California in Woodland Hills. But the company is performing a feasibility study to determine whether to convert from an IBM IMS environment to a CICS environment, which Brightview requires, he said.

Similarly, Ronald Moore, assistant vice-president of information systems at Merchants Service Corp. in Indianapolis, said that while SAA will be important, right now his bank has "a lot of [IBM] 3179 terminals out there." Moore added that as the bank migrates to PCs, Brightview will be considered.

Robert Schwartz, a software coordinator at a major oil firm, said his company is moving full-speed ahead with SAA and that Brightview will be a part of that.

Good direction, bad price

Regardless of when they plan to implement Brightview, customers agreed it was a good direction for their organizations and for MSA. "Clients are frustrated with screens so crammed with data," Schwartz explained.

But for many customers, cost is still an issue. At the product's announcement in November, MSA reported license fees of $25,000 per module for up to 50 users — which could easily add up for customers with a full set of MSA applications.

Schwartz said for a large firm like his, that equals the cost of one programmer, but others were put off by the hefty price tag.

Migration

FROM PAGE 1

standard is always changing and may never reach a final form.

Conniff currently runs IBM's Professional Office System (Profs) as a worldwide network in which his Digital Equipment Corp. VAXs participate. Conniff said he was about to settle on Wordperfect Office as a corporate standard but will now examine Officevision as an alternative.

IBM VP Wheeler

Other users with existing electronic mail systems also pondered the migration question. "We're not sure whether we will replace Profs with Officevision," said Jack Mellon at Ryder Truck Rental, Inc. in Miami.

Mellon said Ryder is part of an SAA "head start" program in which the company has been advising IBM on SAA features. He said it is likely that Ryder will move to OS/2-based workstations and Officevision in about three years.

Ryder's corporate systems include IBM mainframes, AS/400s and PS/2s. Mellon said Ryder could implement Officevision piecemeal on AS/400s, although he added that when he tried Office/400, it degraded performance.

Walter Zilahy, second vice-president of data processing at the Travelers Corp. in Hartford, Conn., said Officevision alone will not justify OS/2 LANs.

"We won't move to OS/2-based LANs because of Officevision but because of applications," he said. It would be a financial, customer service or other application that would warrant the move, he said.

However, Zilahy said he is interested in examining Officevision/MVS as a replacement for Personal Services/CICS as a mainframe application. He said half of Travelers now uses that E-mail package while the other half uses a Travelers proprietary package.

IBM VP Guglielmi

Isabelle Castillo, MIS director at Hospital Corp. of America's Wesley Medical Center in Wichita, Kan., said the pricing of Officevision is attractive. The hospital had been looking at an E-mail package from another vendor priced at $50,000 for its IBM 3090 Model 120E.

With 300 terminals and 150 PCs, the hospital could implement Presentation Manager-style interfaces in some administrative areas. "They're the ones that need graphs and E-mail," Castillo said. Users in other departments could use personal computers or terminal screens, she said.

James Downs, senior vice-president of management services at Barclay's American Corp. in Charlotte, N.C., said a move to Officevision is not in the cards at his organization for at least 18 months.

Barclay's currently uses Wang Laboratories, Inc.'s VS minicomputers for E-mail. Networks of IBM personal computers and IBM-compatible PCs from Wang are connected to the Wang system and to an IBM mainframe.

Barclay's is performing an office automation study and has determined the total cost of an enhanced Wang E-mail system is about $5,000 per user, which is $3,000 less than the $8,000 quoted by IBM for a system with a Presentation Manager appearance. "I'm not convinced that the Presentation Manager is necessary," Downs said.

IBM fully backs LAN Manager, Ethernet

BY PATRICIA KEEFE
CW STAFF

NEW YORK — IBM hemmed and hawed its way into clearing up two major long-standing connectivity mysteries last week: Users can expect full support of key OS/2 LAN Manager application programming interfaces (API) and rival Ethernet technology.

This means that users on IBM OS/2 Extended Edition workstations running Officevision will be able to use resources on Microsoft Corp. LAN Manager-based servers, IBM and Microsoft said. Conversely, LAN Manager workstations will talk to IBM's OS/2 LAN Server.

Cheryl Currid, director of applied information technology at Coca-Cola Foods in Houston, predicted that current users of Novell, Inc. and 3Com Corp. networks will be able to tie into IBM's OS/2 Extended network platform via either LAN Manager Named Pipes API support or third-party gateways. She oversees an IBM Token-Ring network running Novell, Inc.'s Netware and plans to move to Netware 386.

Top dance

Ethernet support means that OS/2 Extended workstations on Ethernet will eventually be able to tap into IBM's Systems Application Architecture (SAA) environment. For users in mixed environments, such support is long overdue.

"It's definitely of interest to us, because we are heavily dependent upon Ethernet," said David Lee, manager of database technology and project systems at Houston-based M.W. Kellog Co. His systems are primarily Digital Equipment Corp. VAX-based, but Kellog is interested in running IBM software on its existing network and achieving tighter integration between IBM and DEC systems.

The formal announcement regarding LAN Manager actually came from Microsoft, a LAN Manager co-developer along with 3Com, and was confirmed by IBM. Officevision, IBM's first SAA application, takes advantage of Microsoft network technology in three areas:

- IBM's OS/2 Extended Version 1.2 will support 13 categories, or 87 LAN Manager APIs. This includes Named Pipes.
- Officevision makes use of the IBM Extended 1.2 LAN Requestor based on LAN Manager technology, Microsoft said.
- OS/2 Extended 1.2 will support Ethernet adapters written to the Microsoft/3Com Network Driver Interface specifications.

IBM is expected to unveil support for specific third-party Ethernet adapters next week, including those from 3Com, Ungermann-Bass, Inc. and Western Digital Corp., sources said.

Users in no rush

Despite user excitement over the Officevision LAN and the connectivity enhancements to OS/2 Extended 1.2, early feedback indicates a slow move to IBM's new network platform.

Much of the Fortune 1,000 is either in the process of choosing between Netware or IBM as their network standard — such as McKesson Corp. in San Francisco — or already has sizable LAN bases installed that cannot be junked.

"The thing that makes me so angry is that those of us into Netware and 3Com have millions invested in hardware, software, training and people, and just because of one announcement, you can't move corporate America that quickly," Currid said.

Chase Manhattan Bank in New York has already begun to play with OS/2 Extended and SAA is "definitely on our plate," said Ken Luke, vice-president of communications, citing an installed base of Application System/400s and an interest in the 16M-bit Token-Ring. However, Luke continued, "We have a couple of Novell and Banyan LANs, and there appear to be some issues there."

If IBM's offering can meet security and performance criteria, there is a chance that Chase Manhattan will replace its Netware investment, Luke said.

While costs are not major issues for either Luke or Chase Manhattan — another Netware user — many users were taken aback by the quantum leap in price between today's MS-DOS and IBM Personal Computer AT bus-based LANs and IBM's new platform.

For example, MS-DOS requires perhaps 2M bytes of memory, while OS/2 Extended recommends 8M bytes. Users used to paying up to $1,500 for a workstation will have to shell out $7,000 for a Personal System/2 Model 70. At minimum, IBM has doubled the cost per node.

"You're talking about roughly a $7,500 price tag to get an intelligent workstation that will run Officevision," said Hal Bersani, an information center specialist at John Hancock Financial Services. Migration will happen gradually, perhaps by the end of 1990; meanwhile, "IBM will have to come down in its pricing," he said.

Officevision, OS/2 in limelight

BY DOUGLAS BARNEY
CW STAFF

NEW YORK — The OS/2 operating system has finally captured the attention of IS. All it took was a solid show of cooperative processing support from IBM and the third-party community.

OS/2, and particularly the IBM proprietary OS/2 Extended Edition, grabbed the spotlight last week with Officevision. The set of applications that IBM announced require OS/2 Extended on a local-area network server to provide users with seamless access to IBM midrange and mainframe computers; OS/2 Standard Edition- and DOS-based PCs can also tie into Officevision but offer more limited user applications. More than a dozen third parties also rallied around the flag with announcements of products that support OS/2 Extended (see story page 119).

Users said the announcements boosted OS/2's stock by finally displaying applications that take advantage of multiprocessing and large memory. Until now, most OS/2 applications have been warmed-over DOS applications.

To further boost the allure of OS/2, IBM announced new features, including a high-performance and more flexible installable file system.

For its proprietary OS/2 Extended Edition Data Manager, IBM announced multiuser access, plans to tie in PC-DOS applications, referential database integrity, a graphical query manager and added language support including Cobol, Fortran, Pascal and PL/1. IBM could not clarify any benefits of using OS/2 Extended instead of Standard Edition on a workstation attached to an OS/2 Extended server.

Users impressed

Officevision and the programs displayed by third parties are indeed a novel approach, users said. "These are the first true OS/2-based applications and also the first SAA-based applications," said Henwell Chou, second vice-president of Travelers Insurance, a division of The Travelers Corp.

"It certainly does change the stature and potential of OS/2," said Rich Luciano, a vice-president in the corporate banking sector of Manufacturers Hanover Trust Co.

The announcement of OS/2 applications does not ensure fast implementation. The products will not begin shipping until fall, and customers must cost-justify the move if they choose to move at all. "Officevision does not come out until September, and its real use won't be apparent for some time after that," noted Robert Metz, senior technical analyst for Whirlpool Corp.

Metz predicts his firm will begin to make a move to OS/2 in about a year, but he and others are troubled by OS/2 Extended's lack of support for third-party devices, such as printers, monitors and communications cards. Without device drivers, OS/2 Extended and Officevision may shut out clones from its network.

"It is all wrapped around proprietary hardware and software. You can't get around that," said Bob Scheussler, director of information systems technologies at Rockwell International.

Being impressed is one thing; being ready to buy is another. "We are very impressed with the added functions," said R. Bruce Johnson, a director of support services at a Wall Street law firm. "The question is, will the specific applications warrant a change?"

SAA

FROM PAGE 1

with a standard interface into IBM's enterprise network puzzle as well as concrete reasons to buy into the so far unsuccessful LU6.2 and OS/2 game plan, analysts agreed.

To date, the cost and memory requirements of OS/2, as well as the difficulties in writing to LU6.2, have discouraged most corporations from venturing much beyond pilots. However, the introduction of Officevision crystallizes the key roles that both OS/2 and LU6.2 will play in uniting IBM's disparate hardware platforms from top to bottom.

Leading the way is the Officevision/2 LAN Series, which not only functions as the springboard into enterprisewide SAA — enabling IS to regain control of unruly LAN implementations while delaying moves to larger minis — but also sets the stage for the beginning of the end of some time-honored IBM technology, analysts said:

- Professional Office System (Profs) and Distributed Office Support System (Disoss) mail, which will evolve into Officevision.
- Dumb 3270 terminals, which over time are expected to go the way of the punch card.
- Stand-alone LANs, which now have an even greater incentive to connect to the enterprise.

Officevision *on a PS/2 will provide background links to servers*

- Intel Corp. 80286-based personal computers limited to 640K bytes of random-access memory, which are rapidly being overshadowed by the power and capacity of IBM Micro Channel Architecture-based workstations.

Successive introductions during the last two weeks of both Officevision and Novell, Inc.'s Netware 386 give minis a one-two punch [CW, May 15].

"There's a big market of people who at some point in time might be candidates for a minicomputer-based system. But now I think they will look strongly at distributed networking," said consultant Andrew Seybold, president of Computer Insider, Inc. As a result, minicomputers may have their role reduced at the departmental level.

IBM's Profs is now "stabilized," according to Robert Leszkowicz, manager of product marketing of office software at IBM, meaning there will be no follow-on versions. Instead, Officevision VM is the successor office automation package.

In fact, "IBM is moving internally to Officevision lock, stock and barrel as fast as it can," said Judith Hurwitz, a senior consultant at Patricia Seybold's Office Computing Group.

At the same time, IBM is taking care not to traumatize its E-mail users, she said. As Profs evolves into Officevision, users will have a choice of migrating to a new interface or sticking with the old one, according to Hurwitz.

IBM focus: Programming ease

BY ROBERT MORAN
CW STAFF

Along with a dozen other software solutions designed to free professionals from burdensome programming, IBM unveiled last week the fruits of its technology arrangement with Metaphor Computer Systems, Inc. in Mountain View, Calif.

IBM Data Interpretation System (DIS) will allow managers and professionals to access local and remote IBM databases and build applications without extensive programming support, IBM said.

With the joint arrangement, IBM will offer DIS software — based on Metaphor's technology — on Personal System/2 Model 70s or Model 80s. The PS/2s will be interconnected on a 16M-byte IBM Token-Ring local-area network that communicates with other similarly configured LANs and IBM 370 hosts operating under MVS or VM.

Metaphor has built a reputation for its easy-to-use, intuitive programming tools. Armed with a mouse, nonprogrammers can build their own applications by linking capsules, which appear as icons on workstation screens.

The Metaphor system — a network of workstations and databases as well as file, communications and personal computer connection servers — allows professionals to interact with relational databases residing on IBM mainframes and various other systems.

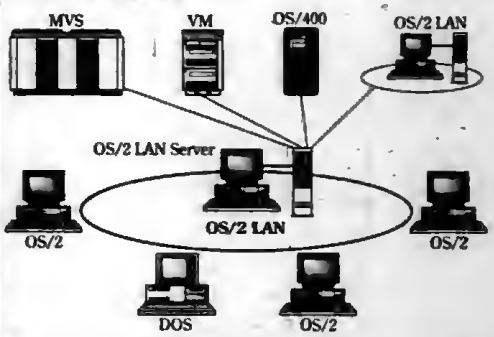
Prices will vary according to configuration. Host Client Software will range from $6,600 for a Group 10 processor to $40,000 for a Group 40 processor, IBM said. The LAN Services software, which will support about 20 users with fully equipped workstation tools, costs about $135,000.

Metaphor now offers coprocessor cards to change IBM Personal Computer XTs and ATs into DIS workstations. Chairman David Liddle said Metaphor will soon introduce a coprocessor card that will let users adapt less expensive PS/2s than the Model 70 or 80.

Also announced was Executive Decisions/VM, allowing the PS/2 to access operational data and external information sources and operate concurrently linked to the VM environment. Prices range from $7,500 to $45,000.

The IBM solution

Officevision/2 LAN Series will link PCs running DOS and OS/2, while OS/2 Extended Edition systems will be able to interact with Officevision products on other platforms



Users frown at IBM's Netview presentation

BY ELISABETH HORWITT
CW STAFF

BOSTON — It was standing room only at a series of demonstrations that IBM held for customers here last week, providing a tantalizing but ultimately frustrating view of the long-awaited graphics-based Netview user interface.

A limited prototype version of a possible future product went through its paces at the First International Symposium on Integrated Network Management. But it caused one user to ask why "a company the size of IBM should be so far behind everyone else in terms of functionality. No vendor has the total solution yet, but IBM is behind the power curve."

The user, who requested anonymity, is a technical manager at a Fortune 500 manufacturing company that is "one of the biggest IBM customers" and currently uses Netview in a number of its installations.

The basic components of the system provided few surprises. The windowed, graphics-based, mouse-driven interface will be based on elements of IBM's Systems Application Architecture, a spokesman said, including OS/2 Extended Edition, Common User Access and OS/2 Presentation Manager.

The system will include a number of features that are offered by competing network management platforms, such as a geographic presentation of the network with a zoom-in feature that allows the user to bring up the status of networking devices within a given network node.

Riddle me this

However, the prototype apparently generated more questions than it answered. One user asked, for instance, how the interface would be used to manage multivendor network management configurations. The IBM spokesman indicated that "one solution" would be to call up other vendors' network management systems as screens.

Conspicuously absent from the demonstration were indications of how and when IBM plans to provide a method for users to issue common commands to non-IBM systems from the interface or collect facts from non-IBM devices into a common database. IBM has yet to announce such a database for its own devices.

"Netview has the same hole it had before: an inability to integrate non-SNA information," said Thomas McDonald, a principal consultant at Natick, Mass., consulting company MGT Technology Group. IBM's inability to demonstrate this capability even in a prototype is a crucial failing, given that several months ago, AT&T demonstrated how users can call up Netview as a window of its announced network management workstation, Accumaster Integrator, McDonald said. Through a link with Cincom Systems, Inc.'s Netmaster, users can then "control anything that Netview controls," McDonald said.

IBM's future interface will be migrated to other IBM network management systems, including those provided in VTAM and OS/400, a spokesman said.

Lotus' 1-2-3/G wins IBM backing at demo

BY DOUGLAS BARNEY
CW STAFF

Although it was introduced more than two years ago, Lotus Development Corp.'s 1-2-3/G finally saw the light of day at last week's IBM Officevision announcement.

Lotus provided a limited demonstration of 1-2-3/G, which runs under IBM's OS/2 Presentation Manager, to show off its so-called "Enterprise Spreadsheet" capabilities. The demo included the unshipped 1-2-3 Release 3.0 transferring data to the unshipped 1-2-3/M for mainframes, which then moved the data to the unshipped 1-2-3/G.

Despite the unfinished nature of 1-2-3/G, IBM gave it a hearty blessing. According to IBM materials, the product was the result of the 10-year joint development and marketing agreement between Lotus and IBM that was reached in April 1987, just moments before the announcement of 1-2-3/G.

According to sources, a separate version of 1-2-3/G that will be tailor-made for Officevision will be sold exclusively by IBM.

1-2-3/G comes equipped with pull-down menus and dialog boxes. With the Blueprint communications specification, 1-2-3/G can generate queries that work against an IBM OS/2 Extended Edition database, officials said.

Lotus rival Microsoft Corp. announced that its Excel spreadsheet will also tie into Officevision using such services as electronic mail. Lotus Executive Vice-President Frank King argued that having 1-2-3/M on the back end will allow 1-2-3 users to access host services such as IBM's Professional Office System mainframe printers.

Cipher to revive tape drives

BY ROSEMARY HAMILTON
CW STAFF

Cipher Data Products, Inc. is planning a comeback for the IBM Application System/400 market.

The tape drive manufacturer, which last year held a prestigious position as a reported AS/400 developer and then seemed to disappear quietly, will introduce a high-performance tape drive for AS/400 users in August, a company official said last week.

The Cipher tape drive will be about twice as fast as what IBM currently offers to the AS/400 market and will sell for approximately $10,000 less, according to Craig Turner, vice-president of Cipher's ½-in. cartridge business unit.

AS/400 users have long been unhappy with the IBM tape drive, which they say prevents them from efficiently backing up data [CW, May 8].

While neither IBM nor Cipher would give details on their relationship, it is believed that Cipher was developing a high-performance tape drive for the AS/400 last year and that the deal fell through shortly before IBM announced its new mid-range computers.

The Cipher tape drive will offer data transfer rates of 450K and 900K byte/sec. In addition, it uses the more advanced tape cartridge technology that can store up to 570M bytes of data per cartridge. Turner said the company will introduce a cartridge with a 1.2G-byte capacity by year's end.

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TRENDS

Technical workstations

Nothing is quiet on the workstation front these days. MIPS and mergers are making headlines, and the workstation's rivalry with the minicomputer is mounting. A crossfire of price/performance-conscious machines continues as vendors recognize they must keep up their attack or lose valuable ground.

In 1985, Apollo Computer, Inc. commanded the field of technical workstations. Since then, Sun Microsystems, Inc. ousted the faltering Apollo, while Hewlett-Packard Co. and Digital Equipment Corp. swapped third and fourth places.

But the landscape is about to shift again. HP's pending buyout of Apollo will push the combined vendor to the top of the market. Based on year-end 1988 figures from International Data Corp. (IDC) in Framingham, Mass., the duo should claim some 35% of installed workstations, just sneaking past Sun's 34%.

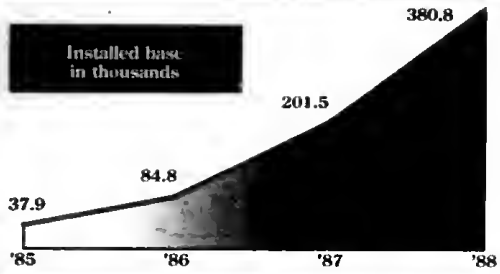
In vendors' intensified quests to offer more for less, workstation costs have dropped, and they should level off, said IDC analyst Vicki Brown. Though entry prices may fall, average costs, including service and maintenance, will not drop dramatically as big players like DEC take a foothold in the market.

The approximate entry-level price, Brown said, ranges from $4,600 to $5,000.

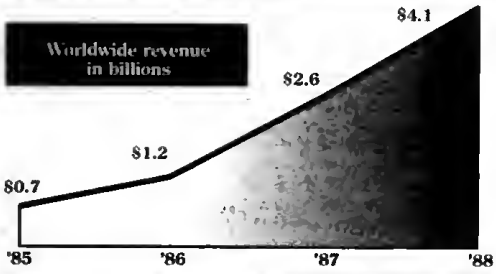
IDC defines technical workstations as 32-bit single-user systems that are distinguished from personal computers in terms of integer and floating-point performance and networking capability.

LAURA O'CONNELL

Rapid climb in number of users . . .

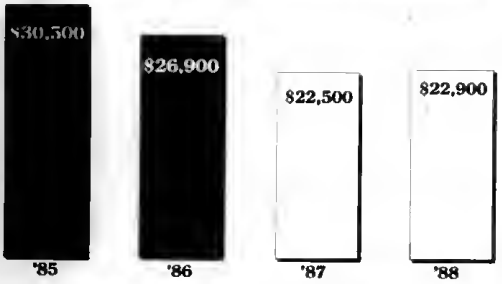


. . . and expenditures

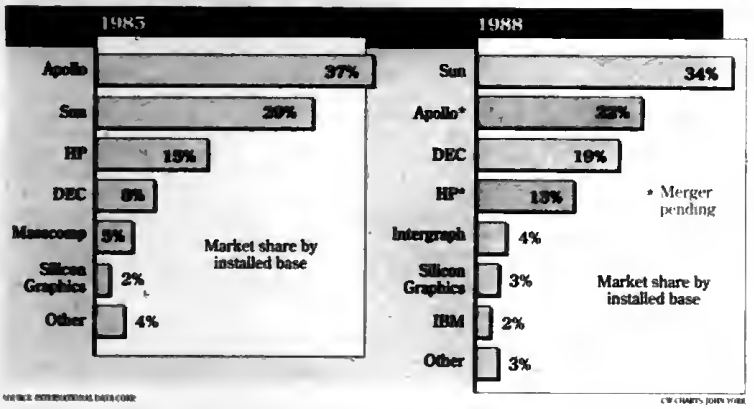


As popularity rises, costs drop

AVERAGE PRICE PER WORKSTATION



Tentative HP-Apollo deal will reshuffle playing field



SOURCE: INTERNATIONAL DATA CORP.

CW CHARTS: JOHN WOBB

INSIDE LINES

Decnet deluxe! The words of Chairman Ken were buzzing around DEC's internal E-mail system last week. "If employees nowadays want security, they should go work for the Post Office," Olsen was reported to have told a gathering at DEC's State of the Company meeting; out of context, the remark sounds like Olsen is preparing the company for impending layoffs. But, truth be told, he was making a point that the industry is so changeable that workers in any company can't really be complacent. Olsen reportedly followed up that comment with a flat denial that layoffs would occur anytime in the near future at DEC and said that although DEC does *not* have a no-layoff policy, layoffs "should be avoided at all costs, even if it is uncomfortable for the company." Meanwhile, according to internal sources, the company will freeze all salaries for three months beginning in July.

Yo-Yo Man. Last week's Senate hearing on computer viruses got off to an unusual start as star witness Clifford Stoll bobbed through the stately hearing room playing with a yo-yo, apparently working off some nervous energy or emulating Tommy Smothers. The frizzy-haired computer astronomer, who tracked down a West German computer spy ring, later provided some highly animated testimony punctuated with humor, diatribes against "the slime who broke into my computer" and tales of how 24-hour monitoring of the West German hackers meant "my weekends were wasted." Stoll added, "My sweetheart at the time was not too pleased."

Look for specifics. Last October, IBM promised major enhancements for its mainframe tape subsystem, the 3480, sometime this year. Last week, an IBM spokeswoman said the company would make good on that promise in the first half of 1989. That gives it about five more weeks to come through. Last year, IBM said it intended to boost its 3480 data cartridge capacity by 300% to 500% while boosting overall 3480 performance by as much as 50%.

Texas style. Compaq will announce today in New York one of the most expensive personal computer lines, which will be based on Intel's 33-MHz 80386 microprocessor. Labeled the 386/33 series, the systems will be positioned as PC local-area network servers and will come in three configurations: a Model 80, 320 and 640. The systems will support 80M-, 320M- and 640M-byte disk drives, respectively. Prices will start at $10,499 and climb to $17,999. Standard features include 2M bytes of memory and one 5¼-in., 1.2M-byte drive. The system will have 640K bytes of controller cache and six slots to support 8- or 16-bit adapters, but not 32-bit cards. Novell had been expected to be on hand, but the companies are still trying to hammer out an agreement to co-develop and market a version of Netware 386 optimized for Compaq systems.

Sparc-ies. When the fire alarm sounded at Boston's Hynes Auditorium during last week's Engineering Workstations Conference, barely a handful of the several hundred persons attending the show headed for the exits. Most kept right on walking the floor, seemingly oblivious to the honking alarms and broadcast announcements to leave. Who says workstation users don't think they're invincible?

Georgia peaches. Among the talk going around about DEC at the recent Decpo South show in Atlanta: Ultrix support is expected for the Microvax 3300 and 3400 next month, the VAX 6400 is on target for July delivery, high-end models of the mainframe Aridus line will have an integral vector accelerator when that line is announced this fall, and the VAX 8200 and 8300 are scheduled to be retired Sept. 26, clearing the way for DEC to unveil multiprocessor Microvaxes.

Now, Mr. Olsen, before you start leveling blasts at the press again, you'd better start monitoring your E-mail. You don't like us, and we can deal with that, but it's your employees who've been spreading your words from screen to screen. Let's make a deal — set up a gateway to our bulletin board (508-626-0214, -0235 or -0165), and we'll monitor the traffic for you. Or call News Editor Pete Bartolik at 800-343-6474 or 508-879-0700 and set the record straight.

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